DOCUMENT RESUME

ED 231 106 EC 151 981

AUTHOR	Waldo, Lois; And Others
TITLE	Functional Communication Board for the Severely Multiply Handicapped.
INSTITUTION	Kansas Neurological Inst., Topeka.; Kansas Univ., Lawrence. Early Childhood Inst.
SPONS AGENCY	Office of Special Education and Rehabilitative Services (ED), Washington, DC.
REPORT NO	ECI-505
PUB DATE	[80]
GRANT	446AH70146; G007804911
NOTE	257p.; Parts of this manual are taken directly from D. Guess, W. Sailor, and D. Baer's "Working draft. Functional Speech and Language Training for the Severely Handicapped, Part 1." (H & H Enterprises, 1979). Tables are small and light.
PUB TYPE	Guides - Classroom Use - Guides (For Teachers) (052) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC11 Plus Postage.
DESCRIPTORS	Articulation Impairments; Language Acquisition; *Language Handicaps; *Multiple Disabilities; *Sensory Aids; *Severe Disabilities; Teaching Methods; *Training Methods; Training Objectives
IDENTIFIERS	*Communication Boards; *Functional Speech and Language Training Program

ABSTRACT

A manual for training the severely multiply handicapped to use communication boards is presented, based on the Functional Speech and Language Training Program. The target group are persons who need a mode of communication but who have poor speech, and poor hand and finger control. A description of the communication boards and symbols includes an explanation of the pointing mode and the way the symbols are grouped grammatically on the board to allow construction of a sentence. Procedures are outlined to use with students who rarely make any sounds; students who may make many sounds but who rarely make different sounds, or who rarely sound as if they are saying words; and students who have poor articulation of their speech and who require only a few signing cues to make themselves understood. For the focal area of "persons and things," nine training steps are presented that are designed to introduce the student to the concept of language and its uses. Each step includes a description of the training goal for the step, a list of training items needed, a description of procedures to be used, training instructions, and a set of instructions used in programing for generalization. The training steps also include two types of scoring forms for recording the student's responses in each session and summary forms to record progress across sessions within the step. Criterion performance is addressed, along with the training procedures of shaping, prompting, and putting-through (e.g., moving hand to point to the correct object). Videotapes are also part of the training packet. (SEW)

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED231106

early childhood institute

Functional Communication Board for the Severely Multiply Handicapped

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
A.K. Rogers-Warren

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

by

Lois Waldo, Perrin Riggs, Kim Davez
Martha Hirsch, Rhonda Eye, Ann Marshall

EC151981

haworth hall ● the university of kansas ● lawrence, ks. 66045 ● phone: 913-864-5600

FUNCTIONAL COMMUNICATION BOARD TRAINING FOR THE SEVERELY MULTIPLY HANDICAPPED*

by

Lois Waldo, Perrin Riggs, Kim Davaz, Martha Hirsch

Rhonda Eye, and Ann Marshall

Special Thanks to

Doug Guess, Wayne Sailor, and Don Baer

(EC Document No. 605)

*This manual represents research conducted at Kansas Neurological Institute supported by grants numbered 446AH70146 (Handicapped Media Services and Captioned Films Program, Bureau of Education for the Handicapped, U.S. Office of Education) and G007804911 (Handicapped Children's Model Program, U.S. Office of Special Education and Rehabilitation Services) and by Kansas Neurological Institute. Use, copying or quoting from this manual requires written permission from the authors. This is a working draft only of this manual.

Parts of this manual are taken directly from D. Guess, W. Sailor, and D. Baer Functional Speech and Language Training for the Severely Handicapped, Part 1. Lawrence, KS: H & H Enterprises, 1979.

A T T E N T I O N R E A D E R S

This program manual is a part of an entire training packet for nonspeech training with severely multiply handicapped students. The packet includes a total of 6 video tapes and one other training manual. The training manual which accompanies this one is entitled: Functional Signing Training for the Severely Multiply Handicapped.

The video tapes are listed below:

*A CHOICE WITH SEVERELY MULTIPLY HANDICAPPED: BASIC COMMUNICATION BOARDS

A CHOICE WITH SEVERELY MULTIPLY HANDICAPPED: BASIC MANUAL SIGNING

*A CHOICE WITH SEVERELY MULTIPLY HANDICAPPED: BEHAVIORAL TECHNIQUES WITH NONSPEECH TRAINING

*A CHOICE WITH SEVERELY MULTIPLY HANDICAPPED: TEACHING SPEECH WITH COMMUNICATION BOARDS AND SIGNING

A CHOICE WITH SEVERELY MULTIPLY HANDICAPPED: NINE STEPS FOR SIGN TRAINING

A CHOICE WITH SEVERELY MULTIPLY HANDICAPPED: NINE STEPS FOR COMMUNICATION BOARD TRAINING

If you are interested in renting or buying one or more of these tapes write to:

Media Services
Bureau of Child Research
2601 Gabriel
Parsons, KS 67357

If you would like a copy of the signing manual or additional copies of this manual, write:

Lois Waldo
Kansas Neurological Institute
3107 West 21st Street
Topeka, KS 6660[illegible]

There will be a minimal charge for duplicating and mailing tapes and manuals.

*Handouts which accompany these tapes can be found in this manual's Appendices.

ACKNOWLEDGEMENTS

This acknowledgement section is a very important part of this training manual. The manual is truly the result of a total effort by a wide range of dedicated, creative people. A few will be mentioned by name, but there will be others not named who contributed in some manner to the overall success and development of the program. To all the mentioned and anonymous, the authors wish to express their sincere appreciation and gratitude.

To Doug Guess, Wayne Sailor, and Donald Baer who allowed us to work on this adaptation of their original program. Our special thanks goes to Dr. Guess, who provided encouragement and reinforcement throughout this project's development.

To Galen Berry who was instrumental in the early development of this program and in the writing of the grant request which ultimately funded much of the development work.

To Bill Keough who provided constant ideas and feedback during program development, especially during the development of the Total Communication Procedures.

To Betty Mains and the Speech Pathologists of the Arkansas Developmental Disabilities Services who helped to field test the manuals.

To Leila Becker, KNI Secretary, who typed the numerous versions of this training manual during its development.

Other persons who made significant contributions to this work include:

Leonard Lavis
Jean Sack
Catherine Ijams
Penny Chiles
Virginia Green
Kay Bryant
Melinda Schroeder
Wanda Gray

TABLE OF CONTENTS

Page

OVERVIEW

Background 1

Persons and Things 2

Prerequisites to the Communication Board Program 3

Total Communication 5

Description of the Manual 6

Description of the Boards and Symbols 7

- Students' Boards
- Trainers' Boards
- Symbol Systems

Description of the Training Sessions 15

- Length of Training Session
- Training Environment
- Reinforcement
- Total Communication Stimulus Condition
- Total Communication Training and Correction Procedure
- Criterion Performance

Guidelines for Individual Training Steps 17

- Training Goal
- Training Items
- Communication Board Display
- Using the Trainer's Board
- Procedures
- Training Instructions
- Programming for Generalization
  - Selecting Appropriate Content
  - Using Sufficient Examples
  - Varying the Verbal Stimuli
  - Using Multiple Trainers
  - Varying Settings
  - Train to Sufficient Duration
  - Schedule of Reinforcement
- Scoring Forms
- Summary Forms

Page

TOTAL COMMUNICATION TRAINING AND CORRECTION PROCEDURES, LEVEL A - NONSPEECH ONLY

Placement 26

Data Collection 26

Training and Correction 27

Criterion Performance 29

TOTAL COMMUNICATION, LEVEL B - ENCOURAGE SPEECH

Placement 30

Deciding Target Speech Response 30

Vocal Stimulation 31

Data Collection 32

Training and Correction 34

Criterion Performance 39

STEP 1 (Object Naming) 41

GENERAL INSTRUCTIONS 41

Training Goal 41

Training Items 41

Communication Board Display 41

Trainer's Board 41

Procedures 43

Training
Criterion

SPECIFIC INSTRUCTIONS
STEP 1a: TRAINER USES SPEECH AND BOARD

Skill Test Instructions 46

Scoring Responses for the Skill Test 46

Training Instructions 51

Page

STEP 1b: TRAINER USES SPEECH ALONE 57

STEP 1c: TRAINER USES BOARD ALONE 58

SUMMARY FORM FOR STEP 1 58

GRAPHING 60

GENERALIZATION 60

STEP 2 (Object Recognition) 62

GENERAL INSTRUCTIONS 62

Training Goal 62

Training Items 62

Communication Board Display 62

Use of Trainer's Board 62

Procedures 62

Training Criterion

SPECIFIC INSTRUCTIONS 65

STEP 2a: TRAINER USES SPEECH AND BOARD 65

Skill Test Instructions 65

Scoring Response for Skill Test 66

Training Instructions 66

STEP 2b: TRAINER USES SPEECH ALONE 72

STEP 2c: TRAINER USES BOARD ALONE 72

SUMMARY FORM 72

GENERALIZATION 72

Page

STEP 3 ("no card")..... 75

GENERAL INSTRUCTIONS..... 75

Training Goal..... 75

Training Items..... 75

Communication Board Display..... 75

Trainer's Board..... 76

Procedures..... 76

Training Criterion

SPECIFIC INSTRUCTIONS..... 76

STEP 3a: TRAINER USES SPEECH AND BOARD..... 76

Skill Test Instructions..... 76

Training Instructions..... 76

STEPS 3b and 3c: TRAINER USES SPEECH AND BOARD ALONE..... 84

SUMMARY FORM..... 84

GENERALIZATION..... 84

STEP 4 (Requesting Symbolized Items)..... 86

GENERAL INSTRUCTIONS..... 86

Training Goal..... 86

Training Items..... 86

Communication Board Display..... 86

Trainer's Board..... 87

Procedures..... 87

SPECIFIC INSTRUCTIONS..... 87

STEP 4: TRAINER USES SPEECH AND BOARD..... 87

GENERALIZATION..... 92

Page

STEP 5 (Requesting Nonsymbolized Items)..... 94

GENERAL INSTRUCTIONS..... 94

Training Goal..... 94

Training Items..... 94

Board Displays for Student and Trainer..... 94

Procedures..... 94

SPECIFIC INSTRUCTIONS..... 94

STEP 5: TRAINER USES SPEECH AND BOARD..... 94

GENERALIZATION..... 98

STEP 6 (Requesting Symbolized or Nonsymbolized Items)..... 100

GENERAL INSTRUCTIONS..... 100

SPECIFIC INSTRUCTIONS..... 100

STEP 6a: TRAINER USES SPEECH AND BOARD..... 100

STEPS 6b and 6c: TRAINER USES SPEECH AND BOARD ALONE..... 108

GENERALIZATION..... 108

STEP 7 ("yes"/"no")..... 109

GENERAL INSTRUCTIONS..... 109

SPECIFIC INSTRUCTIONS..... 110

STEP 7a: TRAINER USES SPEECH AND BOARD..... 110

STEPS 7b and 7c: TRAINER USES SPEECH AND BOARD ALONE..... 123

GENERALIZATION..... 123

STEP 8 ("I want___")..... 140

GENERAL INSTRUCTIONS..... 140

SPECIFIC INSTRUCTIONS..... 140

STEP 8a: TRAINER USES SPEECH AND BOARD..... 141

STEPS 8b and 8c: TRAINER USES SPEECH AND BOARD ALONE..... 146

Page

GENERALIZATION..... 146

STEP 9 (Chained Responses)..... 150

GENERAL INSTRUCTIONS..... 150

SPECIFIC INSTRUCTIONS..... 150

STEP 9a: TRAINER USES SPEECH AND BOARD..... 150

STEP 9b and 9c: TRAINER USES SPEECH AND BOARD ALONE..... 155

GENERALIZATION..... 155

List of Tables

Table	Title	Page
1	Steps for Functional Communication Board Training.....	4
2	Graphic Symbols Needed to Accompany the Trainer's Stimuli.....	12
3	Consecutive Conditions for Training the Program's Steps.....	16
4	Response Combinations Possible in Level B.....	34
5	Response Contingencies in Level B.....	38
6	Step 1 Student Board Displays.....	42
7	Example Trials for Step 1a Skill Test, Level A.....	47
8	Example Trials for Step 1a Skill Test, Level B.....	49
9	Example Trials for Step 1a Training, Level A.....	52
10	Example Trials for Step 1a Training, Level B.....	54
11	Generalization Overview.....	61
12	Example Trials for Step 2a Skill Test.....	67
13	Example Trials for Step 2a Training.....	70
14	Example Trials for Step 3a Skill Test.....	79
15	Example Trials for Step 3a Training.....	82
16	Example Trials for Step 4 Training.....	90
17	Example Trials for Step 5 Training.....	96
18	Example Trials for Step 6a (Phase I) Training.....	102
19	Example Trials for Step 6a (Phase II) Training.....	105
20	Summary of 14 Training Phases of Step 7.....	115
21	Example Trials for Step 7a Skill Test.....	112
22	Example Trials for Step 8a (Phase I) Training.....	144
23	Example Trials for Step 8a (Phase II) Training.....	147

List of Figures

Figure	Title	Page
1	Example Step 9 Student Board Display	9
2	Example Step 7 Handcarried Board Student Display	9
3	Example Lap Tray Student Board	10
4	Symbol Display for Trainer's Board	11
5	Example Hand-drawn Symbols	14
6	Example Scoring Grid	21
7	Example Type 1 Scoring Form Completed	24
8	Example One-part Task Type 2 Scoring Form Completed	25
9	Example Two-part Task Type 2 Scoring Form Completed	25
10	Training and Correction Procedures for Level A Students	28
11	Training and Correction Procedures for Level B Students	35
12	Teacher's Board for Step 1	44
13	Order of Training for Step 1	45
14	Example Scoring Form for Step 1a Skill Test, Level A	48
15	Example Scoring Form for Step 1a Skill Test, Level B	50
16	Example Scoring Form for Step 1a Training, Level A, Type 1	53
17	Example Scoring Form for Step 1a Training, Level A, Type 2	53
18	Example Scoring Form for Step 1a Training, Level B, Type 1	55
19	Example Scoring Form for Step 1a Training, Level B, Type 2	55
20	Example Summary Form for Step 1a	59
21	Trainer's Board for Step 2	63
22	Order of Training for Step 2	64
23	Example Scoring Form for Step 2a Skill Test	68

Figure	Title	Page
24	Example Type 1 Scoring Form for Step 2a Training.....	71
25	Example Type 2 Scoring Form for Step 2a Training.....	71
26	Example Summary Form for Step 2a.....	73
27	Student's Board for Step 3.....	75
28	Trainer's Board for Step 3.....	77
29	Order of Training for Step 3.....	78
30	Example Scoring Form for Step 3a Skill Test.....	80
31	Example Type 1 Scoring Form for Step 3a Training.....	83
32	Example Type 2 Scoring Form for Step 3a Training.....	83
33	Example Summary Form for Step 3a.....	85
34	Student's Board for Step 4.....	86
35	Trainer's Board for Step 4.....	88
36	Order of Training for Step 4.....	89
37	Example Type 1 Scoring Form for Step 4 Training.....	91
38	Example Type 2 Scoring Form for Step 4 Training.....	91
39	Example Summary Form for Step 4a.....	93
40	Order of Training for Step 5.....	95
41	Example Type 1 Scoring Form for Step 5a Training.....	97
42	Example Type 2 Scoring Form for Step 5a Training.....	97
43	Example Summary Form for Step 5a.....	99
44	Order of Training for Step 6.....101	
45	Example Type 1 Scoring Form for Step 6a (Phase I) Training.....103	
46a	Example Type 2 Scoring Form for Step 6a (Phase I) Training.....103	
46b	Example Type 1 Scoring Forms for Step 6 (Phase II) Training.....106	

Figure	Title	Page
46c	Example Type 2 Scoring Forms for Step 6 (Phase II) Training	106
46d	Example Summary Form for Step 6	107
47	Student's Board for Step 7	109
48	Trainer's Board for Step 7	111
49	Example Scoring Forms for Step 7a Skill Test	113
50	Example Type 1 Scoring Forms for Step 7a (Phase I) Training	125
51	Example Type 2 Scoring Forms for Step 7a (Phase I) Training	125
52	Example Type 1 Scoring Forms for Step 7a (Phase II) Training	126
53	Example Type 2 Scoring Forms for Step 7a (Phase II) Training)	126
54	Example Type 1 Scoring Forms for Step 7a (Phase III) Training)	127
55	Example Type 2 Scoring Forms for Step 7a (Phase III) Training)	127
56	Example Type 1 Scoring Forms for Step 7a (Phase IV) Training)	128
57	Example Type 2 Scoring Forms for Step 7a (Phase IV) Training)	128
58	Example Type 1 Scoring Forms for Step 7a (Phase V) Training)	129
59	Example Type 2 Scoring Forms for Step 7a (Phase V) Training)	129
60	Example Type 1 Scoring Forms for Step 7a (Phase VI) Training)	130
61	Example Type 2 Scoring Forms for Step 7a (Phase VI) Training)	130
62	Example Type 1 Scoring Forms for Step 7a (Phase VII) Training)	131
63	Example Type 2 Scoring Forms for Step 7a (Phase VII) Training)	131

Figure	Title	Page
64	Example Type 1 Scoring Forms for Step 7a (Phase VIII) Training	132
65	Example Type 2 Scoring Forms for Step 7a (Phase VIII) Training	132
66	Example Type 1 Scoring Forms for Step 7a (Phase IX) Training	133
67	Example Type 2 Scoring Forms for Step 7a (Phase IX) Training	133
68	Example Type 1 Scoring Forms for Step 7a (Phase X) Training	134
69	Example Type 2 Scoring Forms for Step 7a (Phase X) Training	134
70	Example Type 1 Scoring Forms for Step 7a (Phase XI) Training	135
71	Example Type 2 Scoring Forms for Step 7a (Phase XI) Training	135
72	Example Type 1 Scoring Forms for Step 7a (Phase XII) Training	136
73	Example Type 2 Scoring Forms for Step 7a (Phase XII) Training	136
74	Example Type 1 Scoring Form for Step 7a (Phase XIII) Training	137
75	Example Type 2 Scoring Form for Step 7a (Phase XIII) Training	137
76	Example Type 1 Scoring Form for Step 7a (Phase XIV) Training	138
77	Example Type 2 Scoring Form for Step 7a (Phase XIV) Training	138
78	Example Summary Form for Step 7a	139
79	Student's Board for Step 8	140
80	Deleted	
81	Trainer's Board for Step 8	142

Figure	Title	Page
82	Training Order for Step 8	143
83	Example Type 1 Scoring Form for Step 8a (Phase I) Training	145
84	Example Type 2 Scoring Form for Step 8a (Phase I) Training	145
85	Example Type 1 Scoring Forms for Step 8a (Phase II) Training	148
86	Example Type 2 Scoring forms for Step 8a (Phase II) Training	148
87	Example Summary Form for Step 8	149
88	Training Order for Step 9	151
89	Example Type 1 Scoring Form for Step 9a (Phase I) Training	153
90	Example Type 2 Scoring Form for Step 9a (Phase I) Training	153
91	Example Type 1 Scoring Form for Step 9a (Phase II) Training	154
92	Example Type 2 Scoring Form for Step 9a (Phase II) Training	154
93	Example Summary Form for Step 9	156

List of Appendices

Appendix	Title	Page
A	Percentage Conversion Tables	157
B	Suggestions for Graphing Program's Data	165
C	Videotape Handout: Basic Communication Boards	167
D	Videotape Handout: Behavioral Techniques	171
E	Videotape Handout: Teaching Speech with Communication Boards	174

FUNCTIONAL COMMUNICATION BOARD TRAINING FOR THE SEVERELY MULTIPLY HANDICAPPED

OVERVIEW

BACKGROUND

Peter, Dick, and Jane. Peter is 10 years old, severely retarded, physically handicapped, and rarely makes any sounds. Dick is 12 years old, and severely handicapped. He makes sounds and words he hears other people say, but has never spoken a word on his own. Jane is one year old and is beginning to learn to speak. She will be a normal language user and her language skills will bring her more information about the world in one year than either Peter or Dick have acquired in their 10 and 12 years. With special training, Dick will learn to talk. This manual is for Peter. Peter will need the added help of a communication board to communicate. Both Jane and Dick help us to understand how to teach Peter to use language.

One of the first things Jane learns is that certain sounds represent certain objects. The sound "ball," for example, represents an object Jane likes, and the sound "stove" represents one she does not like. This illustrates a function of language called reference.

Soon after Jane learns that words (referents) represent objects or actions, she learns that she can often get what she wants by saying the name for it. Thus if Jane wants a ball but cannot reach it, she can say "ball" and an adult will get it for her. This is called control.

After learning that she can control her environment (to a certain extent) through the use of referents, Jane soon learns that she cannot control it as much as she would like because she does not know enough referents. Her next step is obvious. She begins to ask "What's that?" This process is called self-extended control.

Jane soon learns concepts such as color, size and possessions. Then she begins to put all her skills together to produce a simple but effective language structure with which she carries on simple conversations. She also begins to remember the answers to her questions and to supply the correct referents from memory rather than continually asking, "What's that?" This process is called integration.

These concepts usually concern speaking or expressive abilities. For expressive skills to be acquired, however, there are corresponding skills which are receptive rather than expressive or productive. Receptive skills allow the understanding of statements heard and questions asked, such as "come here" and "you want to....?"

Although this process may not represent exactly how normal children learn to speak, it is one we follow in teaching language-delayed students to use language. Dick will learn to talk after receiving training in a program using the concepts of reference, control, self-extended control,

integration and reception as its basic organizational structure. This program is entitled Functional Speech and Language Training for the Severely Handicapped, Part 1 (available from H & H Enterprises, Box 3342, Lawrence, Kansas 66044). The program was written by Doug Guess, Wayne Sailor, and Donald Baer.

However, some children, like Peter, may never learn to talk well enough to make themselves understood. Neither does Peter have the motor skills necessary for using sign language. By adapting the program used with Dick, Peter will still be able to learn a functional way to communicate by using a communication board. The program presented in this manual was adapted from the Functional Speech and Language Training Program. It was developed primarily for persons who not only lack language skills, but also lack refined motor and speech skills.

Communication boards are used primarily by persons who have shown they need a way to communicate but who have poor speech, and poor hand and finger control. Communication boards vary widely in their construction and use. Basically, all boards involve some type of graphic symbol display such as photographs or printed words, which the user either points to or indicates to in some other way. The photographs or printed words substitute for the spoken words which this person is unable to use.

This manual eliminates the need for specialized facilities, equipment or specially trained teachers. It can be used in settings ranging from institutions to the home. The only prior knowledge required is some understanding of behavior management techniques. The program has been made as specific as possible while still retaining the flexibility necessary to meet the needs of individual students.

This program was developed from three years of research. It has been used with over a dozen severely handicapped individuals and found to be effective.

PERSONS AND THINGS

There are nine training Steps in the Persons and Things category for communication boards. They are constructed in accordance with the dimensions of language discussed in the Background and are designed to introduce the student to the concept of language and its uses.

Most students will learn, although there are students whose progress is so slow that extensive training is not justifiable. It is difficult to explain why some students fail. In many cases, lack of progress is clearly due to weak reinforcers. In other cases, a modification in the training procedure may improve the student's performance. Changes in procedure should be made with caution, lest the integrity of the program be violated. The present training procedures are appropriate to most severely handicapped persons, but some students do show highly individualized behavior which warrants changing the written instruction.

Problems the trainer may encounter include students who have achieved criterion performance on a Phase or Step of training in terms of intelligibility, but who are showing continuing refinement of their speech for that particular Step's response. These students are usually using a good pointing response, and are being required to use particular vocalizations with specific symbols or perhaps word approximations for certain symbols. In this case, it is possible to continue training on that Phase or Step for a short time with close monitoring of the speech responses.

Finally, some students will not reach criterion on some Steps. This does not mean that the program should be discontinued. Some children will fail to reach criterion performance on a certain Step, yet will easily achieve criterion on the next Step. As a rule of thumb, a student should have at least 25 training sessions on a particular Step (or phase within a Step) before moving to the next Step. If, however, the student is showing steady improvement toward criterion performance, the trainer should continue training beyond 25 sessions. However, no Step (or phase within a Step) should be pursued for more than 40 sessions.

Table 1 presents an outline of the Steps for the Persons and Things category for Communication Boards.

Prerequisites to the Communication Board Program

There are several general prerequisite skills for students entering this program. They include visual discrimination skills, some type of pointing ability, and a set of behaviors which can be termed "communication readiness" skills.

The visual discrimination skills required include acuity, scanning, and matching. The program has never been used with a blind student. If the students are visually impaired, their glasses should afford them normal or near-normal vision. The student should be able to look discriminately at a wide set of symbols displayed across a board of approximately 18 x 20 inches and select the appropriate stimulus or stimuli from this array. The most prognostic visual skill is the ability to match an object to a picture of that object. That is, when the trainer holds up an object such as a ball, the student should point to the matching picture from a set of at least two other pictures. The pictures need not be abstract. They need only vary in dimension; the object being three dimensional, the picture being two.

The pointing skills required can initially be quite gross. However, in order to use the target board display, the student must be judged capable ultimately of using a refined point with good control and range. This is, if the student's inability to point is primarily a behavioral problem (student doesn't know what is expected) the response could probably be acquired with training. If the problem is primarily physical (student is motorically unable to do what is expected); either an alternate program or an alternate board display should be selected for this student.

Table 1
Functional Communication Board Training
for Severely Handicapped Students

STEP	TRAINER'S STIMULI board / "speech"		STUDENT'S RESPONSE board / "speech"
1a	paired speech and board	(Shows objects symbolized on board) asks, what (points to object) / "What's that?"	(label) / "(variable)"
1b	speech alone	(Shows objects symbolized on board) asks, "What's that?"	(label) / "(variable)"
1c	board alone	(Shows objects symbolized on board) asks, what (points to object)	(label) / "(variable)"
2a	paired speech and board	(Shows objects) instructs, show me (label) / "Show me (label)"	(points to object)
2b	speech alone	(Shows objects) instructs, "Show me (label)"	(points to object)
2c	board alone	(Shows objects) instructs, show me (label)	(points to object)
3a	paired speech and board	(Shows objects not symbolized on board) asks, what (points to object) / "What's that?"	no card[1] / "(variable)"
3b	speech alone	(Shows objects not symbolized on board) asks, "What's that?"	no card / "(variable)"
3c	board alone	(Shows objects not symbolized on board) asks, what (points to object)	no card / "(variable)"
4a	paired speech and board	(Shows objects symbolized on board asks, what want / "What want?"	want (label) / "(variable)"
4b	speech alone	(Shows objects symbolized on board) asks, "What want?"	want (label) / "(variable)"
4c	board alone	(Shows objects symbolized on board) asks, what want	want (label) / "(variable)"
5a	paired speech and board	(Shows objects not symbolized on board) asks, what want / "What want?"	want (points to object)[2] / "(variable)"
5b	speech alone	(Shows objects not symbolized on board) asks, "What want?"	want (points to object) / "(variable)"
5c	board alone	(Shows objects not symbolized on board) asks, what want	want (points to object) / "(variable)"
6a,b,c	COMBINES STEPS 4 AND 5 FOR BOTH STIMULI AND RESPONSES		
7a	paired speech and board	(Shows objects) asks, ? (label) / "Is this (label)?"	yes / "(variable)" OR no / "(variable)"
7b	speech alone	(Shows objects) asks, "Is this (label)?"	yes / "(variable)" OR no / "(variable)"
7c	board alone	(Shows objects) asks, ? (label)	yes / "(variable)" OR no / "(variable)"
8a	paired speech and board	(Shows both symbolized and non-symbolized objects) asks, what want / "What want?"	I want (label) / "(variable)" OR I want (points to object) / "(variable)"
8b	speech alone	(Shows both symbolized and non-symbolized objects) asks, "What want?"	I want (label) / "(variable)" OR I want (points to object) / "(variable)"
8c	board alone	(Shows both symbolized and non-symbolized objects) asks, what want	I want (label) / "(variable)" OR I want (points to object) / "(variable)"
9a,b,c	COMBINES STEP 8 WITH STEPS 1 AND 3 FOR BOTH STIMULI AND RESPONSES[3]		

[1]Student is taught a response strategy for use when asked to label an object which has no symbol card on the board.

[2]Student is taught a strategy for requesting desired objects which may not be symbolized on the board.

[3]Step stresses discriminating between questions asked and also teaches response chaining.

The final set of prerequisite behaviors, the "communication readiness" skills are not as easily defined. These are the skills any student enrolled in any language program would hopefully show. Communication readiness concerns one student's response to the environment, and the student's interaction with the environment. Often communication readiness can be affected by another variable which can't be defined as a student's skill. That variable is the degree of stimulation to communicate that the student receives from the environment.

The student who exhibits refined skills in all of these areas has a good prognosis when placed in this program. Any student who does not have refined skills in all the areas may be placed in the program. However, one would expect training to go more slowly, at least initially.

Most students receiving training in this program had normal or near-normal hearing. If a student is hearing impaired, this program may be used successfully simply by the trainer including the use of manual signing in any communication with the student. That is, the student uses the communication board for expression, and learns to understand signs for reception.

Total Communication

This program streeses "total" communication. "Total" communication as used in this program is when both the student and the teacher use as many senses as possible to get the message across. For example, a student may use facial expression and a gesture to tell someone that he needs a drink of water. Another student may use the sign for water and say "wah" to tell someone that he needs a drink of water. A student who uses a communication board may point to a symbol or picture of water and say "dah" to say that he wants a drink. A teacher may simply use facial expression, voice intonation, and speech while saying "GOOD WORK." Or the teacher may routinely sign everything he/she says throughout the day.

When teaching total communication it is important that both the teacher's use of total communication and the student's use of total communication be directly considered. The addition of these other sensory modalities can be very helpful in teaching severely handicapped students to use and understand communication.

In order to incorporate total communication into the program, both the trainer and the student use communication boards during the training of the Steps of the program. Additionally, the Steps of this program are taught to each student in three different ways. The Step is first taught with the trainer both talking and pointing to the trainer's board. The Step is then retaught with the trainer talking but not using the board. This "speech alone" training is done because the student will need to understand other people who do not use a board to communicate.

Finally, the Step is taught with the trainer using the board but not talking. This "board alone" training is important for two reasons. One is that the student be able to understand other students who use a communication board but do not talk. The other is that his "board alone" training allows the student to more completely understand the symbolic, or referent, function of the graphic symbols used in the program.

Training like that described above helps the student to understand the total communication used by others. However, most students must also be taught to use total communication to make themselves better understood when communicating to other people.

Severely multiply handicapped students have a wide variety of speech skills. Some students may never make speech sounds; others may vocalize, but their vocalizations may be gross approximations; and others may talk, but their speech is very difficult to understand. With students who try to talk, but have speech that is hard to understand, a graphic symbol may make their message easier to understand. The spoken word is supported by the symbol card.

This program includes procedures used to record, reinforce, and correct the speech of all of these vocally limited students, while at the same time stressing the pointing responses. Depending on the speech skills of the individual student, the trainer must be prepared to deal with a wide variety of combined speech and pointing responses. Although the basic procedures included in the manual involve shaping, prompting and putting through, the trainer is offered guidelines on how to use these procedures to simultaneously improve both the student's speech and pointing.

Description of the Manual

The program on which this manual is based consists of four series of individual training steps based on the concepts of reference, control, self-extended control, integration, and reception discussed earlier. The program for training Persons and Things was Part 1 of this series. This manual represents an adaptation of six of the nine Steps of the original Part 1 manual. No adaptation has currently been attempted on subsequent manuals of this series.

The three Steps of the original Part 1 manual which have been omitted from the communication board manual are those which involve the processes of self-extended control and integration; that is, those involving the student asking "What's that?" and learning new referents from this process. Several adaptations were researched which would have allowed these Steps to remain a part of the board program. However, none of the procedures tried were satisfactory. Communication boards, unlike speaking or signing, confine by their size the number of referents any one student may see and use at one time. In order to teach new referents through a question and answer routine, an infinite

array of symbols would have had to be present. Perhaps future research will solve this dilemma.

Description of the Boards and Symbols

This program uses boards constructed inexpensively of illustration board, cotton flannel, and heavy, clear vinyl. The boards are developed to use the following system:

Response Mode -- Pointing
Board Display -- Direct Selection, "Slot Filler"
Symbols -- Variable, according to student's needs

The pointing mode may be a fist, hand, elbow, foot, or stylus response. The board display requires the user to indicate directly the symbol or symbols needed to code the messages. The symbols are grouped grammatically on the board in a "slot filler" display allowing for the basic (subject + verb + object) sentences structure. Generally, this allows the user to point to a symbol on the left third of the board for a sentence subject; then the center third for the sentence verb; and finally the right third for the sentence object. The board's upper and lower margins are used to display affirmation/negation terms, modifiers, and question asking symbols. The symbols used on the boards can vary in size, general placement, and pattern depending on each student's skills.

Student's Boards. Each student must have his/her own board. The size of the board is not believed to be an important variable. Use one which can be easily handled by the student with his/her individual handicapping conditions in his/her learning environment. Generally, a board no larger than 15 inches by 18 inches is needed.

The color of the board is also not important, although a dark color is recommended (dark red, dark blue, etc.). Covering a sturdy illustration board with flannel cloth is a recommended technique. The dark background allows the white symbol cards to be more visible. The cloth allows the symbols to be on a muted, dull background, and allows easy application of new symbol displays. Heavy pliable, clear plastic covers may be sewn to envelope each board to protect the symbol cards, or the board may be covered with clear adhesive paper, with new symbols being added after they have also been covered with the adhesive paper.

Figure 1 shows an example board display for a student who is on Step 9 (the final Step of this program). The board size in this example is 15 inches by 20 inches. The symbol size is 1" by 1". The symbol cards are white, placed on a red background. This student began in the program using a board with only two symbols. As he learned more and more skills on the board, more and more symbols were added. This student is ambulatory. He has not yet learned to carry or care for his board

independently. Therefore, the trainer has made several boards for him to use. One board stays in his classroom, one in the school's cafeteria, and several in key areas of his home.

Figure 2 shows an example board display for a student who is in Step 7 of the program, but who does carry her board with her at all times. The board has been cut in half and placed in a folding pouch which has handles, much like a shoulder bag. To use the board it is placed open on a flat surface. To carry, the board is folded and held by the straps.

The board in Figure 3 is an example of how a board is attached as a lap tray to the arms of a wheelchair for nonambulatory students. The symbol cards are attached to the underside of a sheet of plexiglass using clear adhesive paper, and the plexiglass sheet is slid onto the lap tray.

The type of board that a student uses in this program is limited only by that student's motor and cognitive skills. The trainer should feel free to construct the board to fit each individual's needs.

Trainers' Boards. The trainer's board is constructed just as the student's board shown in Figure 1. If the student is using an alternate board display, the trainer's board should match the student's however. The symbol type should also be identical to those the student uses. It is suggested, though, that all symbols be 1 inch by 1 inch in size on the trainer's board to allow for a larger vocabulary.

The display of the symbols on the regular trainer's board is in Figure 4. The actual objects symbolized are optional. The trainer's object vocabulary must parallel the student's. However, because the trainer's board is probably used with more than one student, it is not always possible to directly match all of the symbol's locations.

Additional verb symbols may be placed in the center third of the board.

Additional training and correction symbols may be placed in the upper portion of the center third.

Additional sentence subjects (e.g., pictures or names of the students) may be placed in the middle of the far left third of the board.

The placement of the symbols on the trainer's board should be planned carefully in advance of any training. Few changes in the symbol's placement should occur once training begins. When the trainer's board is used in training, the teacher employs simultaneous pointing and speech whenever possible.

Table 2 presents an outline of the symbols needed to accompany each Step's instruction or question. The speech used can vary in complexity

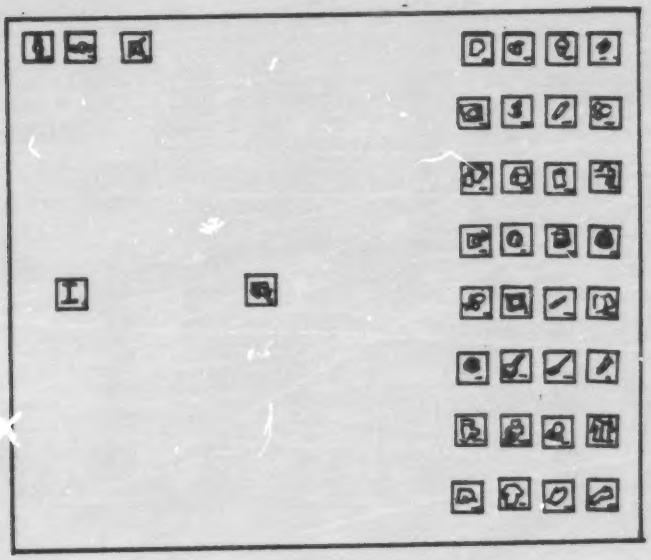


Figure 1: Example Step 9 student board display.

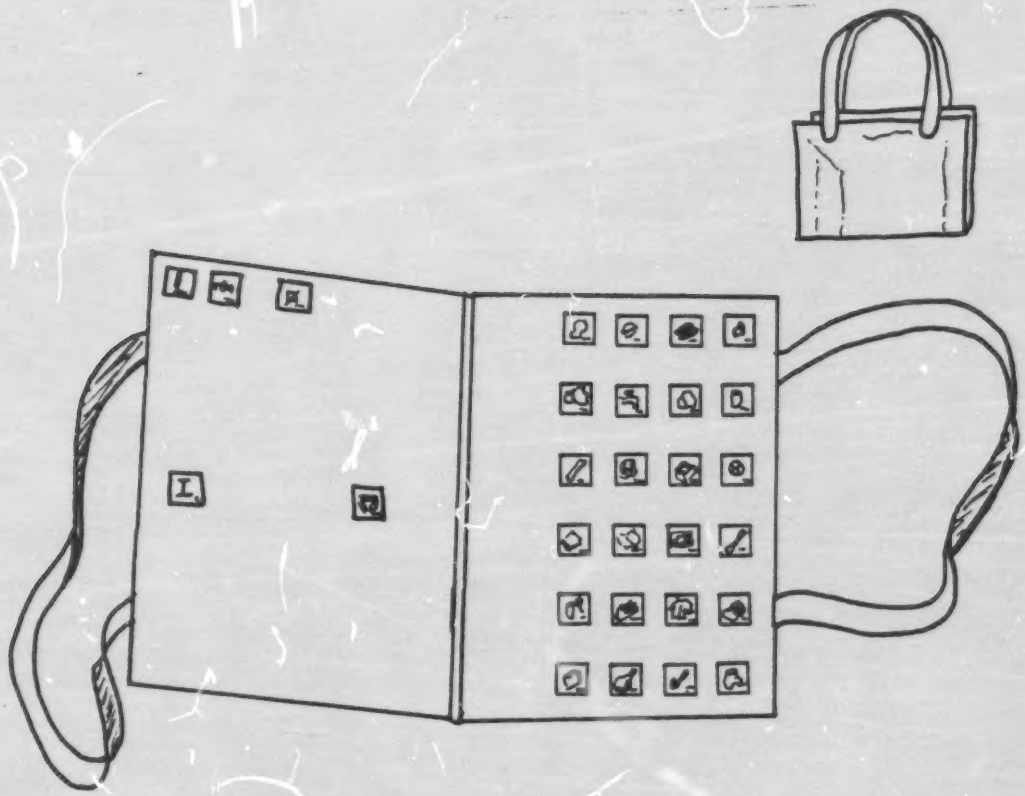
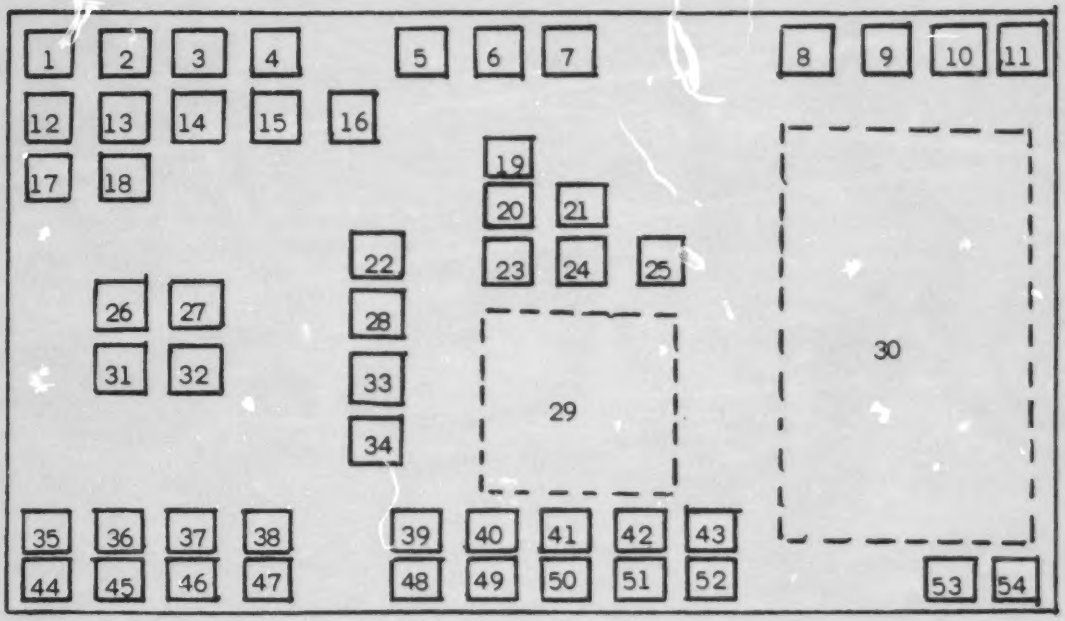


Figure 2: Example Step 7 Hand Carried Student Board Display

Figure 3: Example Lap Tray Student Board

Figure 4

Symbol Display for Trainer's Board



1. yes
2. no
3. no card
4. don't know
5. correct
6. good
7. wrong
8. me
9. her
10. him
11. them
12. red
13. blue
14. yellow
15. green
16. orange
17. big
18. little
19. give
20. show
21. do
22. want
23. sit
24. stand
25. jump
26. I
27. my
28. is
29. all other verbs
30. all other nouns
31. you
32. your
33. am
34. are
35. question
36. who
37. how
38. when
39. back
40. in front
41. behind
42. beside
43. up
44. what
45. whose
46. where
47. which
48. on
49. under
50. in
51. out
52. down
53. size
54. color

Table 2

Graphic Symbols Needed to Accompany the Trainer's Stimuli

Speech	Board Symbols
STEP 1 WHAT'S THAT *	What
STEP 2 POINT TO (LABEL), or	Point (object symbol)
SHOW ME (LABEL), or	Show me (object symbol)
GIVE ME (LABEL)	Give me (object symbol)
STEP 3 WHAT'S THAT *	What
STEP 4 WHAT WANT	What want
STEP 5 WHAT WANT	What want
STEP 6 WHAT WANT	What want
STEP 7 IS THIS A (LABEL) *	? (object symbol)
STEP 8 WHAT DO YOU WANT?	What want, or
	What you want
STEP 9 WHAT IS THIS? *	What
WHAT DO YOU WANT?	What you want

* Whenever the speech instruction includes the words "this" or "that" the trainer points to the actual training object. No symbols on the board represent these words.

(e.g., WHAT WANT? versus WHAT DO YOU WANT?, or WHAT'S THAT? versus WHAT IS THIS?), but the symbols remain simple throughout training.

Symbols are available on the trainer's board for limited correction, praise and training words. These should be used spontaneously by the trainer whenever appropriate. The trainer should not attempt to use the board for all communication during the session. Most communication during the session (praise, attending instructions, general conversation, etc.) may be speech alone.

During training the trainer's board should be placed beside the student's board in easy view for the student.

Symbol Systems. Any type of symbol system which the student is cognitively capable of understanding may be used in this program. The symbol systems which are currently being used on communication boards include printed words, Blissymbolics, Peabody Rebuses, hand-drawn rebuses, and photographs or other reproductions. All students participating in the development stages of this program used either Peabody Rebus or hand-drawn rebus graphics for their symbol system. None had yet learned to read, and Blissymbolics were judged to be too conceptually difficult for both their present skills and needs. Photographs were not used because some of the students were able to recognize drawn images more easily, and because drawn symbols were less expensive. Further information regarding the Blissymbolics may be obtained by ordering the Handbook of Blissymbolics by Silverman, McNaughton, and Kates from Blissymbolics Communication Foundation, 862 Eglinton Avenue, East, Toronto, Ontario, Canada, M4G 2L1. Further information regarding the Peabody Rebuses may be obtained by ordering the Standard Rebus Glossary by Clark, Davies, and Woodcock, from American Guidance Services, Publishers Building, Circle Pines, Minnesota 55014.

Neither the Peabody nor hand-drawn rebuses used in the program were colored. The use of colors on the symbols is discouraged because this makes the symbols more expensive and time consuming to reproduce, and because the student may not learn the overall symbolic function of the rebus if he/she attends to the color on the symbol. That is, if the symbol card shows a blue striped ball, the student may have difficulty learning that symbol may also represent yellow spotted, or solid green balls.

It is strongly recommended that all symbol cards used in this program (other than printed word cards) have the word that the card represents either typed or written in the lower right-hand corner. This will allow persons not familiar with the exact meaning of that symbol to understand that symbol. The addition of this word to the symbol card is not meant to be used to teach the student to read, but simply to make messages easier for a listener to understand. Figure 5 shows examples of two of the hand-drawn rebuses used in the program. Notice that there are three sizes of each symbol. This allows the trainer some flexibility for the students whose visual or motor skills do not allow using the smaller cards.

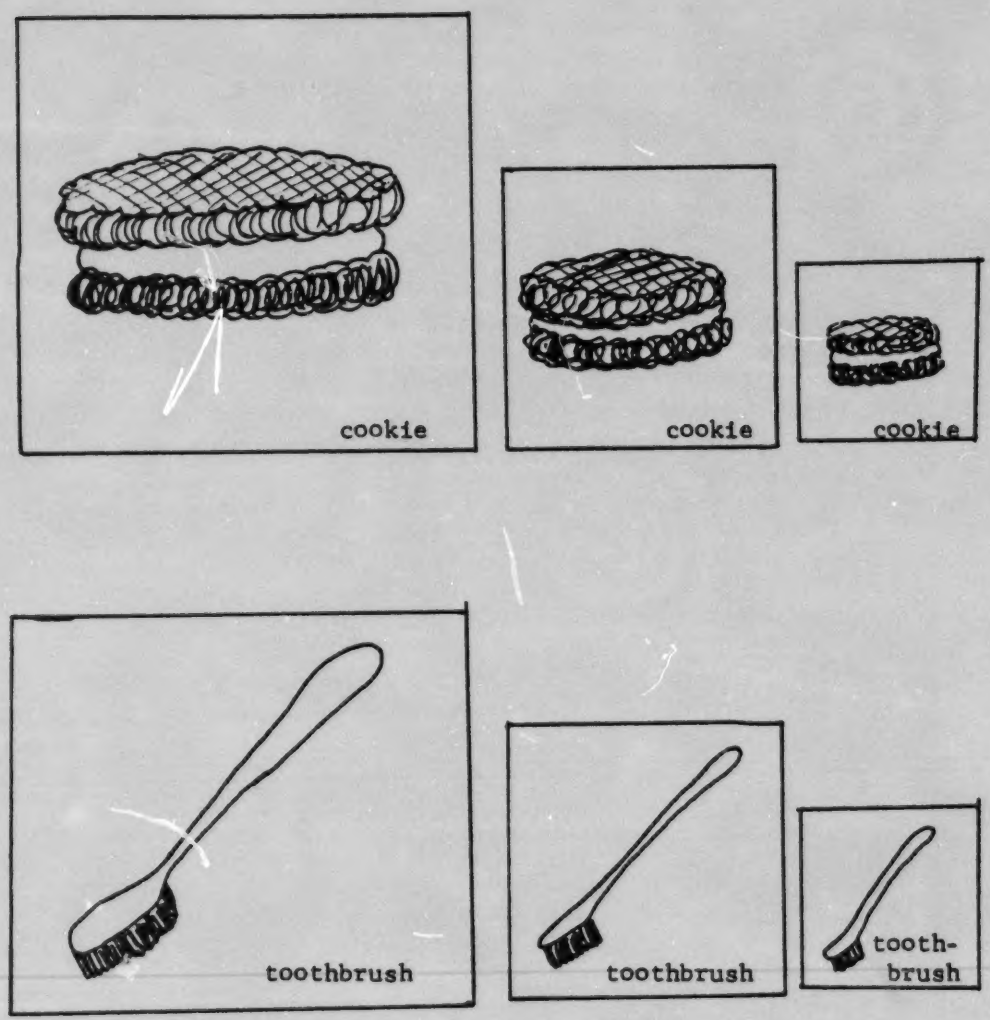


Figure 5: Example hand-drawn symbols

Description of the Training Sessions

Length of Training Session. The length of a training session for use of this program should vary according to each individual student's skills. If the student is new to the Step, or is having a difficult time learning the Step, sessions with repeated trials twice a day are recommended. If the student is bored, tired, or especially inattentive at any time, the trainer should stop the session and try again at another time. As the student's correct responses approach criterion performance, the trainer may want to distribute the trials into smaller groups and run them several times during the day. The trainer should never feel bound to complete the exact number of trials per session that are shown on the scoring forms.

Training Environment. The training sessions should always be relaxed, enjoyable, and natural. They should be conducted in a setting where the student would most likely be required and need to use the communication skill he/she is being taught. The trainer should avoid conducting the sessions in a room which is only used for one-to-one training. Use instead a part of a classroom, bedroom, dining room, play area, or kitchen. It is also not important for the trainer and student to be seated at a table. If the student is not confined to a wheelchair, training may be conducted with both the trainer and student seated on the floor.

Several Steps of this program involve the student asking to receive an object. It is extremely important that the student be given the opportunity to be involved with the requested object right during the session. For example, if the student has requested a game or toy, all props necessary to use it should be available (record and record player, crayon and coloring book, etc.).

Reinforcement. For each trial in a session, the trainer provides the student with a stimulus, which may be a question, a command, or the presentation of an object or action. When the student gives an acceptable response, the response should be reinforced. The trainer selects the types and amounts of reinforcers to give for correct, shaped, or prompted responses. The Steps are designed so that a correct response produces a natural reinforcement contingency for the student, especially in the higher-level Steps. The trainer should reduce the use of tangible reinforcers as the student advances through the program, possibly replacing them with tokens, then praise, and finally, complimentary statements appropriate to the student's performance. How rapidly each student comes under the control of naturally occurring social reinforcers depends on each student's reaction to reinforcement and on the skill of the trainer.

Total Communication Stimulus Condition. Students who use communication boards as their primary way to expressively communicate can benefit

from seeing adults in their environment modeling the use of a board as they talk. In all probability, the student will also encounter peers who use a board, but are not able to talk. They will undoubtedly encounter both peers and adults who talk but do not use boards. In order to insure that the student has a functional understanding of all three of these conditions, the Steps of this program include direct training with each.

Additionally, learning the referent function of a graphic symbol involves different cognitive skills than learning the referent function of a spoken symbol or word. Students should be taught to use and understand the symbolic function of a rebus symbol (for use on a communication board) much as a student would be taught to read printed words. In order to completely understand the graphic symbol, the student should at least be able to select the symbol when shown the object, select the object when told the spoken word, and select the object when shown the symbol. If the student is able to perform all three of these activities, the trainer may feel comfortable that the student "understands" that graphic display symbolizes that object.

In order to teach the student these three symbolic functions and to help them understand the conditions described earlier in this section, the Steps in this program are each taught in three different ways consecutively, with the trainer asking the question (or giving the instruction) in a different way each time (see Table 2).

Table 3

Consecutive Conditions for
Training the Program's Steps

Step	Stimulus Condition
a	Speech and Board together
b	Speech alone
c	Board alone

Total Communication Training and Correction Procedure. Students will not respond correctly on every trial. A long period of training may be needed for some students before correct responses, or even partially correct responses, are produced. The trainer must be prepared to deal with partially correct response, incorrect response, or no-response situations. Students who accompany their pointing with some type of speech response require the trainer to be prepared to deal with a much broader array of combined responses. The trainer must be able to simultaneously teach improved speech and pointing behaviors.

The speech skills of severely handicapped students who are taught to

use communication boards vary widely. Simultaneously improving such varied skills requires the trainer to use different procedures with different students. This manual includes specific procedures to use with students whose speech skills fall into two general categories. Most vocally limited students may be comfortably taught using one of these two training and correction procedures (according to their particular speech skills). This manual discusses the procedures as Levels. Any one student may be taught in this program using either of the two Level's training and correction procedures. The Level A procedure is used with students who rarely make any sounds. The Level B procedure is used with students who do make sounds or words. This may mean the students make many sounds, but rarely make different sounds, or it may mean the students who make many different sounds but rarely say words. Finally, Level B may be used with students who attempt to use spoken words to accompany their communication board, but who cannot say their words clearly enough to make themselves understood.

The basic procedures used in both of the Levels include shaping, prompting, and putting-through. Shaping is the process of reinforcing partially correct responses to help the student toward the completely correct response. Total responses that are more nearly correct than previous efforts are reinforced. Responses that are less accurate than previous efforts are treated as incorrect. Prompting consists of providing the student with additional clues to assist a correct response. Putting-through consists of helping the student make the correct response (e.g., moving arm and hand to point). Prompting and putting-through should be used with extreme caution because the student may become totally dependent on them.

Criterion Performance. Criterion performance is the level of success a student must attain to be competent in the skill the Step is training. Unless otherwise specified, a student can exit from any Step in the program or from any of several phases within the Step, by either of two criteria:

1. Achieving 80 percent or more correct responses within a training session. (Training sessions are defined as the completion of all trials included on a scoring sheet for a particular Step.)

2. Producing 12 consecutive correct responses within a series of trials in a training session.

Guidelines for Individual Training Steps

Each Step includes a description of the Training Goal for the Step, a list of Training Items needed, a description of the Communication Board Display and Procedures to be used, Training Instructions, including Use of the Trainer's Board, and a set of suggestions used in Programming for Generalization. The training Steps also include two types of Scoring Forms and one type of Summary Forms for recording the student's responses in each session and progress across sessions within the Step.

Training Goal. This section describes the specific skills or concepts to be trained in the Step and tells how the Step is integrated with a previous Step.

Training Items. Suggestions for selecting stimulus materials are included for each training Step. The actual materials and props needed for the procedures in this manual should always be selected with each individual student's preferences, age and needs in mind. We strongly discourage substituting pictures for the actual items because this decreases the authenticity of the training environment, reduces the probability that students will apply their new learning elsewhere, and may confuse students using picture symbol cards on their boards.

The prepared scoring forms sometimes list items appropriate for that Step. However, even in these cases the trainer should only use those items if they are appropriate for that individual student. Things the trainer should take into account when selecting items to be trained are the student's ability to recognize and use the object or action, and the possible reinforcing and functional qualities of the object. Remember, communication boards have limited space. Choose the objects carefully!

The following list of suggested training items will assist trainers in selecting items for the initial Steps in the program:

FOOD:
cookie, pop, apple, candy, gum, juice, crackers, chips, peanuts, milk

CLOTHING:
pants, dress, shoe, shirt, sock, coat, cap, pajamas, mittens, hat, watch

TOYS:
ball, car, top, doll, puzzle, block, drum, gun, ring

BODY PARTS:
nose, tummy, eye, ear, mouth, foot, chest, arm, leg, knee

MISCELLANEOUS:
chair, table, TV, spoon, pan, cup, soap, toothpaste, towel, comb, brush, paper, pencil

Communication Board Display. As the student progresses through any steps of the program, the board becomes more and more complex. The board's display has been specifically planned to allow for the student's growing language needs. Therefore, instructions are given in each Step to show where the new symbols should be displayed on the student's board.

Using the Trainer's Board. Each new Step requires the trainer to use additional symbol cards for giving instructions and asking questions in the "Speech plus Board" and "Board Alone" stimulus conditions. This section gives instructions on how to effectively use the trainer's board during the Step's training.

Procedures. This section includes instructions for giving the Skill Test (if the Step has one) and the proper correction procedure to follow. This section also includes a flow chart indicating the order of training to proceed through for that Step.

Training Instructions. This section gives specific instructions for training the skill which is the goal for the particular Step. It gives the order in which items are to be presented, what to say to the student, and the response to expect for all three parts (a, b, and c) of the Step.

The graphic symbol instructions the trainer gives to the student are always printed in small underscored letters (what). The spoken instructions are always printed in capital letters (e.g., WHAT IS THAT?). Instructions which are to be given in speech and board together are printed one after the other with a slash mark between (what/WHAT?). The desired response is printed just like the trainer's (ball/BAH).

Where appropriate, this section explains how the training items are arranged.

Programming for Generalization. Many Steps include a generalization section with instructions for extending a newly learned skill or concept to the student's whole environment. This is necessary because many students will use language only in the training environment or with the trainer. It is further necessary because many environments are not aware of the use of communication boards and must be taught to understand the system just as the students do. Ordinarily, these generalization procedures are administered by the student's parents, parent-surrogates, teachers, or other significant persons who have daily contact. Their purpose is to increase use of the newly taught skill with persons other than the trainer and in environments other than the training area. Additionally, the generalization procedures help keep other persons aware of the student's progress. This makes them more aware of the student's skills, so that those skills can be properly recognized and reinforced. Past training has shown that this part of a student's programming may be the most important. In order to achieve spontaneous communication, emphasis must be placed on this section of training. Generalization programming for one Step may be completed at the same time in-session training is being initiated on the next Step.

Without the use of the suggested special efforts to promote the handicapped child's use of newly acquired language skills outside the training setting, it is quite likely that generalization will not occur. There are a number of different strategies one may implement to promote generalization from training to functional use of language to communicate in everyday life settings. Some of these are discussed below.

Selecting Appropriate Content. It is important to choose words and word combinations that will be needed by the student in his everyday environment. Words that are functional for the child are most likely to be used and reinforced. An attempt has been made to develop a functional program. In some Steps, the specific words to be taught are to be selected

by the teacher. They should include words relating to activities or objects of interest to the student. They should also be objects which he can use frequently.

Using Sufficient Examples. If teaching a noun label it is important to use several stimulus objects during training. For example, if teaching the symbol shoe, one should use a number of different shoes in the training sessions. This will make it more likely that the child will be able to correctly use shoe with other shoes he sees in other places. When teaching a grammatical form such as "I want____.", it is important to teach the child to use "I want" with a number of items. As his vocabulary grows, he will have a sentence form he can use to request new items.

Varying the Verbal Stimuli. Ultimately, the child should be able to respond to a variety of different verbal stimuli which may sound different, but which have the same meaning (e.g. "Show me ____" or "Point to ____"). Care must be taken with some students not to do this too early. In most cases it will be advisable to begin training with a consistent verbal stimulus and begin varying it only after the response has been acquired.

Using Multiple Trainers. Having more than one person train a particular skill can aid generalization greatly. This might mean a teacher and a teacher aide taking turns running a program on alternate sessions; it could mean having a parent run sessions at home while the teacher runs them at school during the day; it could mean having the student learn the task to criterion with one trainer, then working on the task to criterion with another person before it is considered acquired.

Varying Settings. Students should learn to use a skill in more than one environment. For example, a student may be taught to point on their communication board for "I want object" in the classroom, the lunch room or the home. Some noun labels are appropriate to the bathroom, others to dining areas, others to the classroom. The child should be trained to use them there, either initially, or as soon as they are acquired in the first training setting.

Train for sufficient duration. It is important not to discontinue training too soon after a skill is acquired. In general, we feel more comfortable with a criterion performance which is spread over two or three days rather than a single day at a high level of accuracy. We do not recommend continuing on and on with a boring task which the child has already acquired, however. Thus the trainer will want to work to criterion, but then continue some maintenance trials while training other things. The trainer may also build the acquired skill into some new task and work on it in conjunction with the new task. The general point is that skills taught and never used are likely to be forgotten. They need to be taught long enough to be well learned, and then put into use so that they will be remembered.

Schedule of reinforcement. Behaviors taught under a continuous schedule of reinforcement will be acquired more quickly. It may be necessary to use extrinsic reinforcers to provide adequate motivation to

learn. We would encourage the trainer to use continuous reinforcement initially and to be sure that they are providing some consequence which is reinforcing to the student. Once the skill is acquired, we recommend gradual fading of the extrinsic reinforcers and a shift to the natural consequences of the behavior.

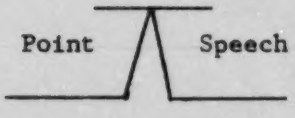
Examples of specific ways of producing generalization will be provided with each training step.

Scoring Forms. Each Step includes two types of scoring forms designed specifically for the training sequence in the Step. The scoring forms are labeled Type 1 and Type 2. Type 1 forms are designed similarly to those used in the original speech manual. One form is used per session. Each page of the Type 2 forms is designed to be used for several consecutive days, however.

The student's responses are recorded in the same way on both Type 1 and Type 2 forms. A special scoring grid is used which allows the pointing part of the response, and the spoken part of the response to be scored individually for each trial. NOTE: The scoring grid has one additional area which is not used in this program. The top of the grid is used in the signing adaptation of this program, but is not used for the board program.

Figure 6

Example Scoring Grid



The scoring forms provided for each Step and for phases within the Step are working aids as well as data records. For example, some Steps require that the stimulus (S^D) presentations be randomized. For these Steps, the numbers are arranged on the scoring form in random order. To use the form, simply assign one number on the scoring form to each item to be trained and present them in the order that the numbers appear on the scoring form.

On certain other Steps, a particular order of presentation of the S^D (stimulus) makes it easier for the student to grasp the concept involved. Here again, the scoring form serves as a working aid.

The Type 1 Scoring Forms are quite simple to use, and are self-explanatory. This type of form may be best to use if the trainer is new to the program, or Step, as it provides more detailed information about how to conduct each trial. The Type 2 Forms may need to be studied in more detail before the trainer can use them.

The following instructions are given for using the Type 2 multi-session self-graphing scoring forms.

1. Select the scoring form for the Step to be trained.

2. Write the student's and trainer's names on the blanks provided at the top of the page.

3. Number the page. If the student requires more sessions than the form provides to achieve criterion, number each successive page accordingly for each Phase or Step.

4. If applicable, circle the appropriate Phase on the form's title line.

5. Record the Speech Level used with the student.

6. List any items used in the training.

7. Notice the description of the trainer's stimuli (listed first, in upper case letters) and the student's expected response (listed second, in lower case letters and quote marks). If the Step uses a two-part task, the first stimulus/response set is listed as "a" and the second set as "b." If the student is required to answer with one of several responses to either task, each response is assigned a code letter or number.

8. One column of scoring grids (i.e.,) represent one session's data. Go to the bottom of the first column of grids and write the session's date in the first blank.

9. Notice whether the form has session "DATE" blanks for each column or for each two columns. If two columns are used, check to see if the first column, "a," is connected by an arrow to column "b." If so, this indicates that the column "b" task always follows the column "a" task and that both tasks are considered <u>one completed trial</u>. That is, the task in column "a" is completed first followed immediately by the completion of the task in column "b."

10. Notice the presence or absence of a vertical column toward the left side of a form entitled "STIMULUS PRESENTATION."

    If the column is absent, the student is always given the same stimulus and is always expected to give the same response for any one data column.

    If the column is present, this indicates the student is given a scrambled stimulus presentation and is expected to respond according to that scrambled order within the same data column. The column uses the codes assigned earlier (see instruction number 7). The trainer must refer to these codes before each trial to determine what items to use and/or what instruction or question to present.

11. Training is initiated by presenting the trial indicated by the first (lowest) set of scoring lines (⊓) on the column and recording the responses on that first set of lines. It is also possible to begin the first trial at the top of the column and progress down, or to begin at some other section of the column.

12. Training continues by presenting the trials consecutively up or down the column, recording each trial in turn.

13. At the completion of the training session count the total number of responses which would count toward criterion.

14. Referring to the far left vertical column entitled "NUMBER CORRECT," select the number to be graphed (from instruction 13) and circle the scoring grid corresponding to this number. As successive sessions are graphed, connect each of the session's circled data points. If the "Number Correct" is zero circle the "X" under the appropriate column. If the student must have both responses in a chained response correct to count toward criterion, the trainer may circle the area between the columns of data for that session.

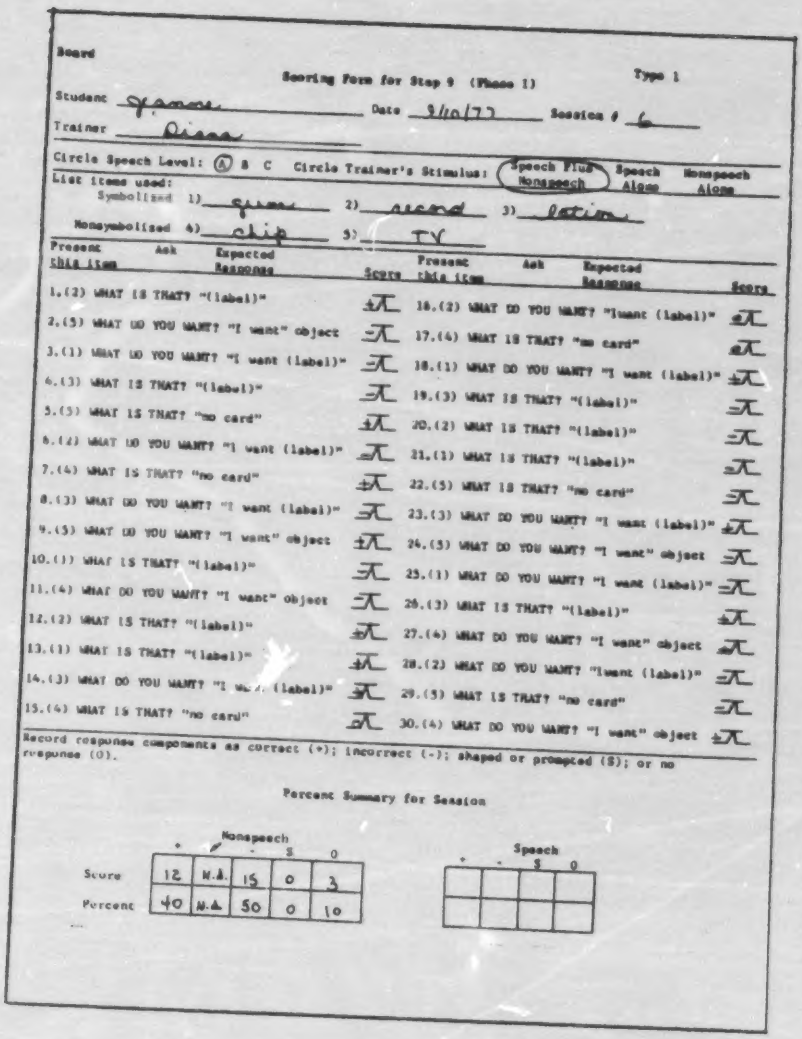
15. The trainer may want to graph each part of the grid's data separately (speech and pointing). In that case, the use of colored pens, or separate graph symbols may aid in interpreting the graph's data.

16. Write and date any relevant comments on the back or bottom of the form.

17. Begin the next session with the same page by dating the next column and repeating the procedure explained above. Figures 7, 8, and 9 indicate example data recorded on Type 1 and 2 scoring forms.

Summary Forms. Summary forms are provided to chart progress across sessions. Data from either Type 1 or Type 2 forms may be recorded on the summary forms. For students who are receiving training using the Level A Total Communication Procedure, only the percent of correct pointing responses are recorded. For Level B students, space is provided to summarize the type of speech responses the student used during that Step. Space is provided for recording the date when training was started for that part of the Step, the date when criterion performance was reached, and the total number of sessions needed to achieve criterion performance. Use a new summary form to record the three parts (a, b, and c) of the Step's training. Be sure to always write under "Trainer's Stimulus Condition" which of the parts is represented (i.e., speech plus board, speech alone, or board alone).

Figure 7: Example Type 1
Scoring Form Completed



Board

Scoring Form for Step 9 (Phase 1) Type 1

Student Jamie Date 5/10/77 Session # 6

Trainer Dina

Circle Speech Level: (A) B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

List items used:
Symbolized 1) jump 2) record 3) lotion
Nonsymbolized 4) chip 5) TV

Present this item	Ask	Expected Response	Score
1.(2) WHAT IS THAT? "(label)"			±
2.(5) WHAT DO YOU WANT? "I want" object			−
3.(1) WHAT DO YOU WANT? "I want (label)"			−
4.(3) WHAT IS THAT? "(label)"			−
5.(5) WHAT IS THAT? "no card"			±
6.(2) WHAT DO YOU WANT? "I want (label)"			−
7.(4) WHAT IS THAT? "no card"			±
8.(3) WHAT DO YOU WANT? "I want (label)"			−
9.(5) WHAT DO YOU WANT? "I want" object			±
10.(1) WHAT IS THAT? "(label)"			−
11.(4) WHAT DO YOU WANT? "I want" object			−
12.(2) WHAT IS THAT? "(label)"			±
13.(1) WHAT IS THAT? "(label)"			±
14.(3) WHAT DO YOU WANT? "I want (label)"			−
15.(4) WHAT IS THAT? "no card"			−
16.(2) WHAT DO YOU WANT? "I want (label)"			±
17.(4) WHAT IS THAT? "no card"			±
18.(1) WHAT DO YOU WANT? "I want (label)"			±
19.(3) WHAT IS THAT? "(label)"			−
20.(2) WHAT IS THAT? "(label)"			−
21.(1) WHAT IS THAT? "(label)"			−
22.(5) WHAT IS THAT? "no card"			−
23.(3) WHAT DO YOU WANT? "I want (label)"			±
24.(5) WHAT DO YOU WANT? "I want" object			−
25.(1) WHAT DO YOU WANT? "I want (label)"			−
26.(3) WHAT IS THAT? "(label)"			±
27.(4) WHAT DO YOU WANT? "I want" object			±
28.(2) WHAT DO YOU WANT? "I want (label)"			−
29.(5) WHAT IS THAT? "no card"			−
30.(4) WHAT DO YOU WANT? "I want" object			±

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech +	-	S	0
Score	12	N.A.	15	0	3
Percent	40	N.A.	50	0	10

	Speech +	-	S	0

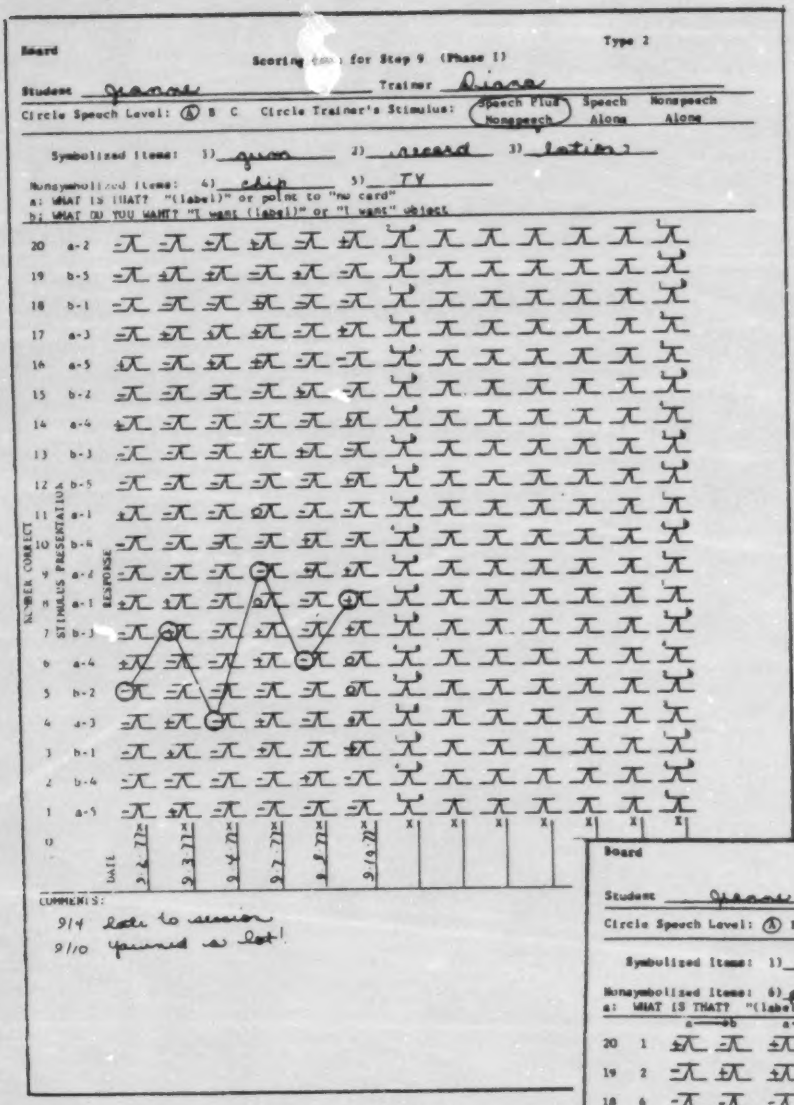

Board Type 2
Scoring Form for Step 9 (Phase I)
Student Jeanne Trainer Diane
Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone
Symbolized Items: 1) gum 2) record 3) letter
Nonsymbolized Items: 4) chip 5) TV
a: WHAT IS THAT? "(label)" or point to "no card"
b: WHAT DO YOU WANT? "I want (label)" or "I want" object
NUMBER CORRECT
STIMULUS PRESENTATION
RESPONSE
Date
9/4 9/7 9/9 9/10
COMMENTS:
9/4 Late to session
9/10 Jeanne is sick!

Figure 8: Example Type 2 Scoring Form Completed.

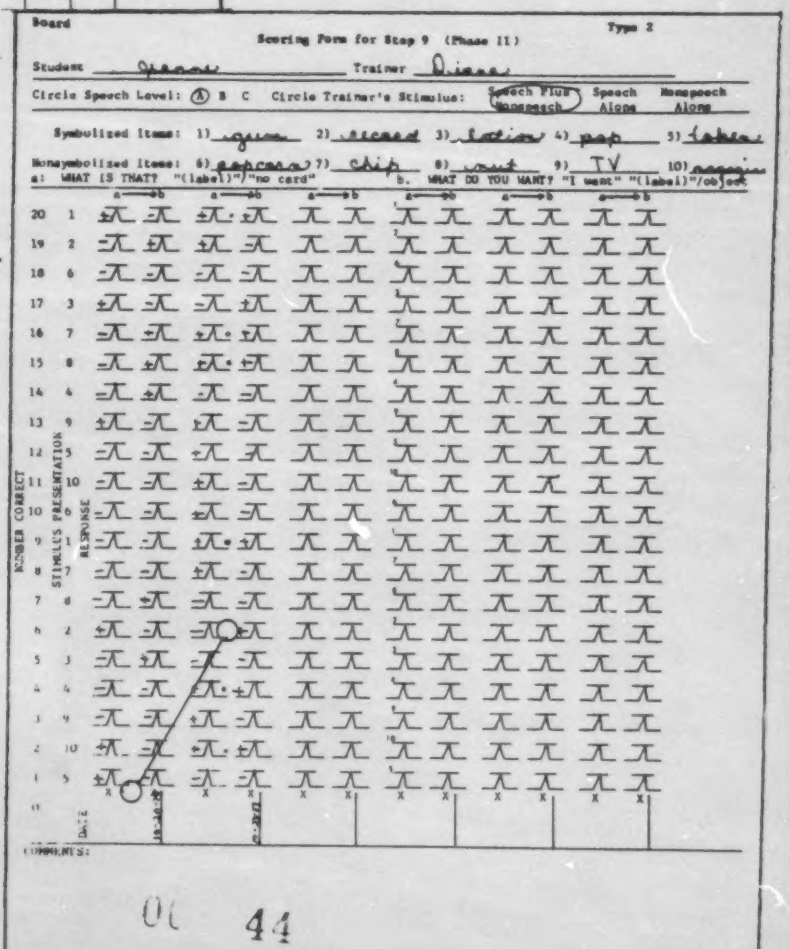

Board Type 2
Scoring Form for Step 9 (Phase II)
Student Jeanne Trainer Diane
Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone
Symbolized Items: 1) gum 2) record 3) letter 4) pop 5) label
Nonsymbolized Items: 6) raincoat 7) chip 8) coat 9) TV 10) magazine
a: WHAT IS THAT? "(label)"/"no card" b. WHAT DO YOU WANT? "I want" "(label)"/object
NUMBER CORRECT
STIMULUS PRESENTATION
RESPONSE
Date
COMMENTS:

Figure 9: Example Two Part Task, Type 2 Scoring Form Completed.

TOTAL COMMUNICATION TRAINING AND CORRECTION PROCEDURES

LEVEL A --- NONSPEECH ONLY

The goal of this Level of training is to establish functional communication through a communication board. Level A students seldom utter speech sounds. Communication for these students will depend entirely on their communication board. The trainer will directly train the student's nonspeech skills and need not work on speech at all.

Placement

The students who are placed in this Level are usually those who fall under one or more of the categories listed below:

1. Have a severe or profound hearing loss;
2. Are over the age of 16;
3. Make no sounds voluntarily;
4. Make no sounds during vocal stimulation;
5. Have severe motor handicaps such as paralysis or spasticity involving their speech mechanisms (lips, jaw, chest muscles, etc.);
6. Can produce speech sounds only with great difficulty because of spasticity, athetosis, or paralysis.

Data Collection

Recording is completed on the communication board responses (or pointing responses) for each trial only. The pointing nonspeech response is scored on the lower left of the grid (X⋀_) and all other grid areas remain blank. A trial should be recorded on the data sheet each time the student is provided with a stimulus (question, command, or object). The trainer may indicate the topography of the response by recording a (+) for correct, a (-) for incorrect, or a (0) when the student does not respond. If a prompted or partially correct response was reinforced, an (S) may be recorded.

More specifically, the different symbols for this Level mean the following:

(+): The student pointed to the correct symbols clearly enough so a listener not familiar with the student's skills would understand the response out of context. The student should respond within 5 to 10 seconds of the trainer's stimulus without having received any prompts or cues from the trainer.

(S): This score is recorded any time the trainer reinforces a partially correct response, or if the response was prompted or cued. For example, the student may have required some help (additional cue or prompt) to complete a partially correct response, or he may have required physical help from the trainer to complete the correct response. This score may be used also if the student independently gave a better response than had been given before, but it was still not clear or quick.

(-): Within 5 to 10 seconds, the student pointed incorrectly. The student may have pointed to an out of context symbol card; pointed to more than the cards needed; given another type of response such as pointing to an object instead of the symbol card; given a sloppy, unintelligible point; resisted some type of prompt; or did any of the above after being given a cue or prompt. This score is also recorded any time the trainer judges that a previously shaped (reinforced) response is no longer acceptable and a slightly "more correct" response will be required in the future (response shaping).

(0): The student did not attempt to point to anything; or responded after 5 to 10 seconds. Five to ten seconds is a rule-of-thumb measure to use. For some students, you may want to wait a little longer. For example, it may take a motorically impaired student 15 seconds to respond. If at the end of 5 or 10 seconds, the student has not begun to respond, a (0) should be scored.

Training and Correction

Students will not respond correctly on every trial. A long period of training may be needed with some students before correct responses, or even partially correct responses, are produced. The trainer must be prepared to deal with partially correct response, incorrect response, and no-response situations.

The basic procedures used in this manual were described briefly in the original manual (Guess, Sailor, and Baer, Functional Speech and Language Training, 1977). Unless the trainer is familiar with shaping behavior, and is able to apply the techniques to the student's responding on every trial, it is unlikely that much success will occur. When used correctly, shaping and prompting allow some students to learn responses they would not have been able to otherwise. One reference which should be a helpful resource to a person unfamiliar with these procedures is Hall, R. V., Managing Behavior, Volume 2, Behavior Modification: Basic Principles, Lawrence, KS: H & H Enterprises, Inc., 1971.

Figure 10 shows how training proceeds in the Steps of this manual for students in Level A. Generally, the trainer should reinforce all correct, or improved responses (if shaping or prompting is being used), and not reinforce incorrect or no responses. If the student does not respond, or

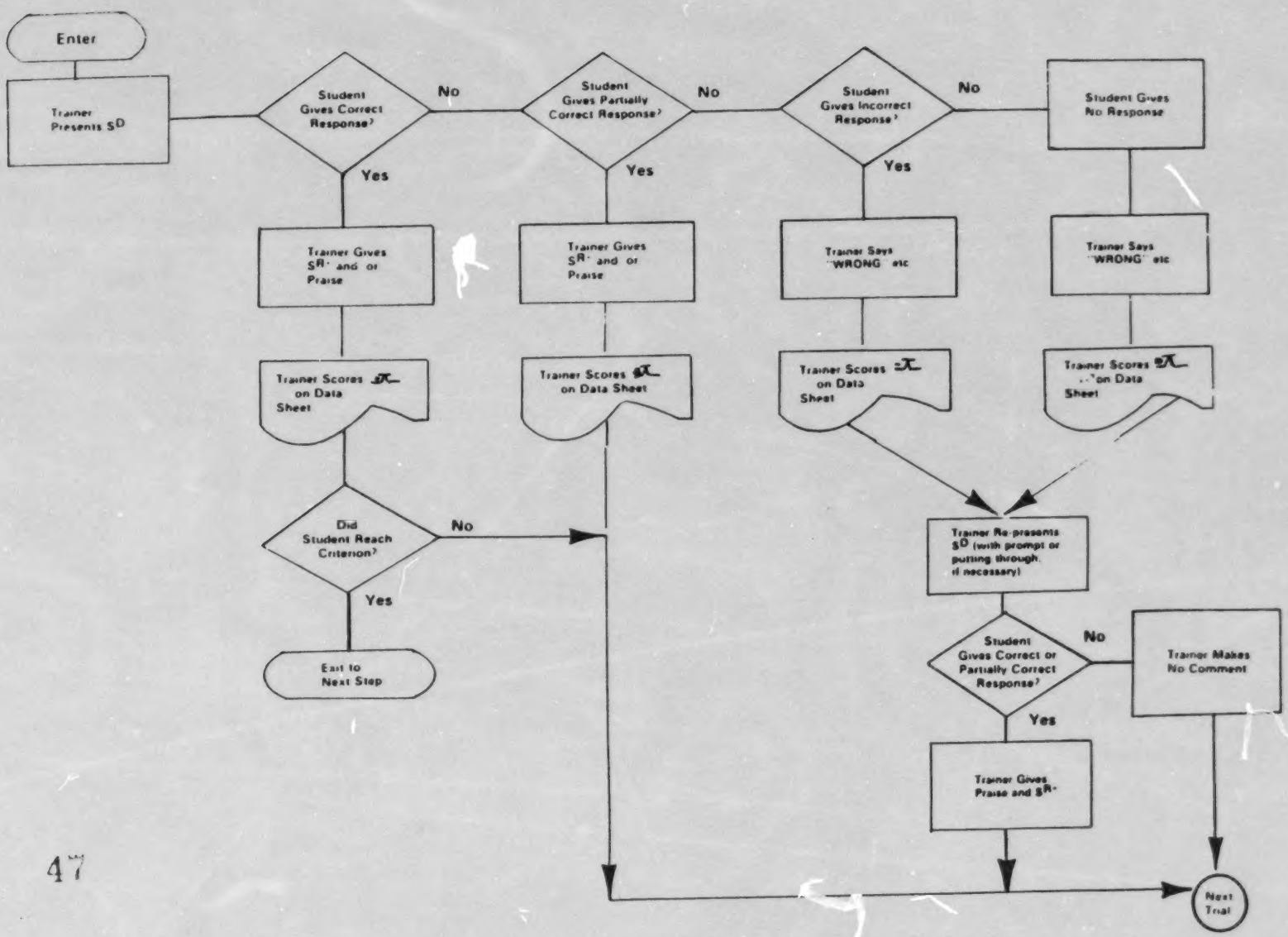


Figure 10: Training and Correction Procedures for Level A Students

responds incorrectly, the trainer should show him/her the right answer and then ask the question (or give the instruction) again (stated as "re-present SD" on the Figure).

Criterion Performance

Criterion performance, as discussed, is the level of correct responding which indicates that the student has successfully learned the new skill. Criterion for Level A training is identical to that of the speech program. That is, unless otherwise specified, a student can exit from any Step in the program, or from any of several phases within the Step, by either of two criteria:

1. Achieving 80 percent or higher correct pointing responses independently (i.e., without prompting) within a training session. (Training sessions are defined as the completion of all trials included on a Type 1 scoring sheet or one column for a Type 2 scoring sheet.)[1]

2. Producing 12 consecutive correct pointing responses within a series of trials in a training session.

The student does not move from one Level to another as he/she completes Steps or Phases of the program. If the trainer has taken the time to appropriately assess the student's vocal skills before selecting the Level to be used, he/she will probably remain in the same Level through several or all Steps of the language program.

LEVEL B ---- ENCOURAGE SPEECH

The goal of this training Level is to establish functional communication through a communication board when the student accompanies each point with some type of vocalization or verbalization. Students placed in this Level are those who make some speech sounds, but whose main source of intelligibility will rely on their communication board. Their limited speech may merely serve as a signal that they are communicating. Although they may exhibit a variety of vocal skills, their prognosis for independent or intelligible verbal speech is either poor or very long term. Each time the student gives a pointing response he or she will be either encouraged, or required to vocalize.

[1] See an earlier page of this manual for a discussion of the two types of scoring sheets.

The type of vocalizations used by the students may vary widely. For example, some students will make the same sound(s), like "bah," for each symbol card they use. If they were pointing to the sentence, "I want crayon," they may say "bah bah bahbah," or perhaps only "bah." Other students may use some specific sounds to mean certain words. For example, one student always said "puhpuh" when pointing to the puzzle symbol, and never used that two-syllable vocalization when pointing to any other symbol. Other students will have a standard group of sounds and syllables they use randomly regardless of what sign or symbol card they are responding to.

Although the emphasis of this training is on the pointing response, the trainer should attempt to concurrently develop the student's speech and pointing through prompting and shaping.

Placement

The trainer may use Level B procedures for students exhibiting behaviors like those listed below.

1. Vocalizes at a fairly high rate spontaneously during free play and/or structured activities.
2. Vocalizes more frequently or more clearly during vocal stimulation activities.
3. Spontaneously vocalizes when talked to.
4. Spontaneously vocalizes while pointing to a symbol card during training or assessment.
5. Has shown slow progress in vocal imitation or speech articulation training.
6. Talks, but can't make their speech understood.

Deciding Target Speech Responses

The first session(s) of each new task or Step whould be spent with the trainer paying particular attention to, but only observing, the student's speech responses. During this time, the trainer may wish to reinforce responses contingent on only the pointing responses. After observing how the student uses speech with this particular response, the trainer will know better what may be required and what should probably be encouraged.

"Required" speech for Level B students means that he/she must say something each time they point sometime during an utterance in order to be reinforced. Some students can be required to say something for each

symbol card they use in a sentence, others can be required to say only one sound for a sentence. Some students will be required to use specific syllables with certain symbol cards, (saying "yuh" while pointing to "yes"); others will be required simply to make any sound while they point to any symbol card. Generally, a trainer may require (i.e., make reinforcement contingent on) paired vocalizations when a student is spontaneously using a vocalization with the symbol card(s) during at least 25% of the trials for that card, provided the trainer continues to provide a high rate of vocal stimulation for that response.

"Encouraged" speech for Level B students means that, although it would be nice to have a vocal response, reinforcement for that trial is not contingent (dependent) on a vocalization accompanying the point. However, through vocal stimulation (to be described later) the student is encouraged to eventually pair a vocalization to that point. Generally, a trainer should encourage vocalizations for all pointing responses that are not currently accompanied by a sound.

Most Level B students will have a mixture of required and encouraged vocalizations.

Many Level B students will also have a mixture of specific and non-specific paired vocalizations they use with their cards. Like the student above who said "yuh" as she pointed to "yes," specific vocalizations are those which are used by that student to "mean" that word. This student will use that syllable consistently when she points to yes and will rarely say "yuh" for any other word. Because "yuh" is a required, specific vocalization, this student would not be reinforced if she pointed to "yes" and said "oh."

Trainers are cautioned to take care in assigning specific vocalizations to their students' cards. Be sure to rely heavily on what the student's present skills are. For example, do not require a student to use the vocalization "ka" for candy if you have only heard him say it once with the symbol card. Encourage him to use it during vocal stimulation, but do not require it during a trial until he is pairing it on his own more frequently.

Vocal Stimulation

Vocal stimulation activities are extremely important for Level B students. These activities are used to encourage new or prompt better speech from the student during training sessions. The stimulation activities may occur before, after or periodically during the session, but must occur at some time during each session. Take cues from the student as to when this should take place. The student may indicate stimulability by producing a better vocal response during the correction procedure. If this occurs, the trainer may wish to continue working on the speech (paired with the nonspeech, whenever possible) for a few minutes before beginning the next trial.

The actual activities used to stimulate vocalizations will vary

depending on the age and skills of each student. Students who only have a few symbol cards they pair with vocalizations should be stimulated to vocalize with the other cards as well. Students who use very gross vocalizations should be encouraged to use clearer syllables or perhaps to vocalize with the number of syllables contained in a word, or the number of words in a sentence. Even students who use specific vocalizations or word approximations can be stimulated to use better articulated sounds.

The trainer may use vocal play, give "speech and pointing models" for imitation, or perhaps just play with a desired object to stimulate vocalization. Some students will be stimulated to make any sound even without pointing. Other students may be given a speech model paired with a nonspeech model repeatedly for imitation.

Reinforce all vocalizations during this activity. Especially reinforce vocalizations during this activity which are paired with a pointing response. Do not, however, pressure the student to vocalize, or punish him or her for remaining quiet. These stimulation activities should be a pleasant, motivating time for the student.

The stimulation should probably last no more than a minute at a time, but may occur several times during a session.

The trainer need not collect any data during these stimulation activities.

Data Collection

During Level B training, recording is completed for both response categories for each trial. The pointing component of the response is scored on the lower left of the grid (X⌐), and the speech component is scored on the lower right of the grid (⌐X). The top line on the grid may remain blank.

The pointing responses for each trial are recorded as defined earlier in the first Level:

(+): The student pointed correctly to the symbols clearly enough so a listener not familiar with the student's skills would understand the response out of context. The student should respond within 5 to 10 seconds of the trainer's stimulus without having received any prompts or cues from the trainer.

(S): This score is recorded any time the student gives a partially correct response, which is as good or better than earlier responses, or if the student responded correctly to a prompt or cue. For example, the student may have required some help (additional cue or prompt) to complete a partially correct response, or may have required physical help from the trainer to complete the correct response. This score may be used also if the student independently gave a clearer response than had been given before, but it was still not intelligible.

(-): Within 5 to 10 seconds, the student pointed incorrectly. The student may have given an out of context symbol card; pointed to more than the symbol cards needed; given another type of response such as pointing to an object instead of naming it; given a sloppy unintelligible point; resisted some type of prompt; or did any of the above after being given a cue or prompt. This score is also recorded any time the trainer judges that a previously shaped (reinforced) response is no longer acceptable and a slightly "more correct" response will be required in the future (response shaping).

(0): The student did not attempt to point to anything; or responded after 5 or 10 seconds.

The speech responses for each trial during Level B are recorded using basically the same type of definitions:

(+): This score is rarely used to record a speech response in Level B. However, it would be used any time the student said a word clearly enough that a novice listener would understand. The student must have responded independently within 5 to 10 seconds of the trainer's stimulus.

(S): This score is the most frequently used speech score in Level B. It may represent any of the following: a speech approximation which is as good or better than earlier responses; an imitated speech response; a prompted speech response; any unintelligible, nonconflicting vocalization which accompanies a point, assuming it is the student's best attempt; or a specific but unintelligible vocalization which accompanies a point, again assuming it is a "best attempt."

(-): Within 5 to 10 seconds the student said something incorrectly. In Level B, an incorrect speech response is usually one of three responses. First, a (-) may be recorded any time the trainer judges that the vocal response given was not as clear as some used earlier. Or a (-) may be recorded when a student failed to use a required specific vocalization with a certain point. Finally, a (-) is recorded any time a student uses a speech approximation to accompany a point which sounds very much like another word, that is, a conflicting vocalization.

(0): The student did not say anything or did respond but after 10 seconds.

Because two response categories are recorded, there are 16 different possibilities of response combinations the student may give in this Level of training (see Table 4). Examples of this Level might be that after having been shown a ball, the student might point clearly to the ball symbol card while using the speech approximation, "buh." This response would be recorded (+ $\wedge$ S). Or the student might point clearly to the shoe symbol card (when shown a ball) and use no speech response. This trial would be scored as (- $\wedge$ 0).

For students in Level B, the ($\wedge$ S) speech score will probably reflect the likely target response to be strengthened for most training. The trainer

Table 4: Response Combinations Possible in Level B.

NONSPEECH \ SPEECH	+	S	-	0
+	+,+	+,S	+,-	+,0
S	S	S	S	S,0
-	-,+	-,S	-,-	-,0
0	0,+	0,S	0,-	0,0

must be constantly aware of how the ($\wedge$S) score is applied to each student's responses from session to session. Once each week or so, the trainer should record exactly what the student said for each symbol card. Written notes should be kept on the student's summary sheets indicating what the (S) score represents for each task and how the response has improved during training. The trainer will learn through observing and working with each student what the student is capable of producing.

Training and Correction Procedure

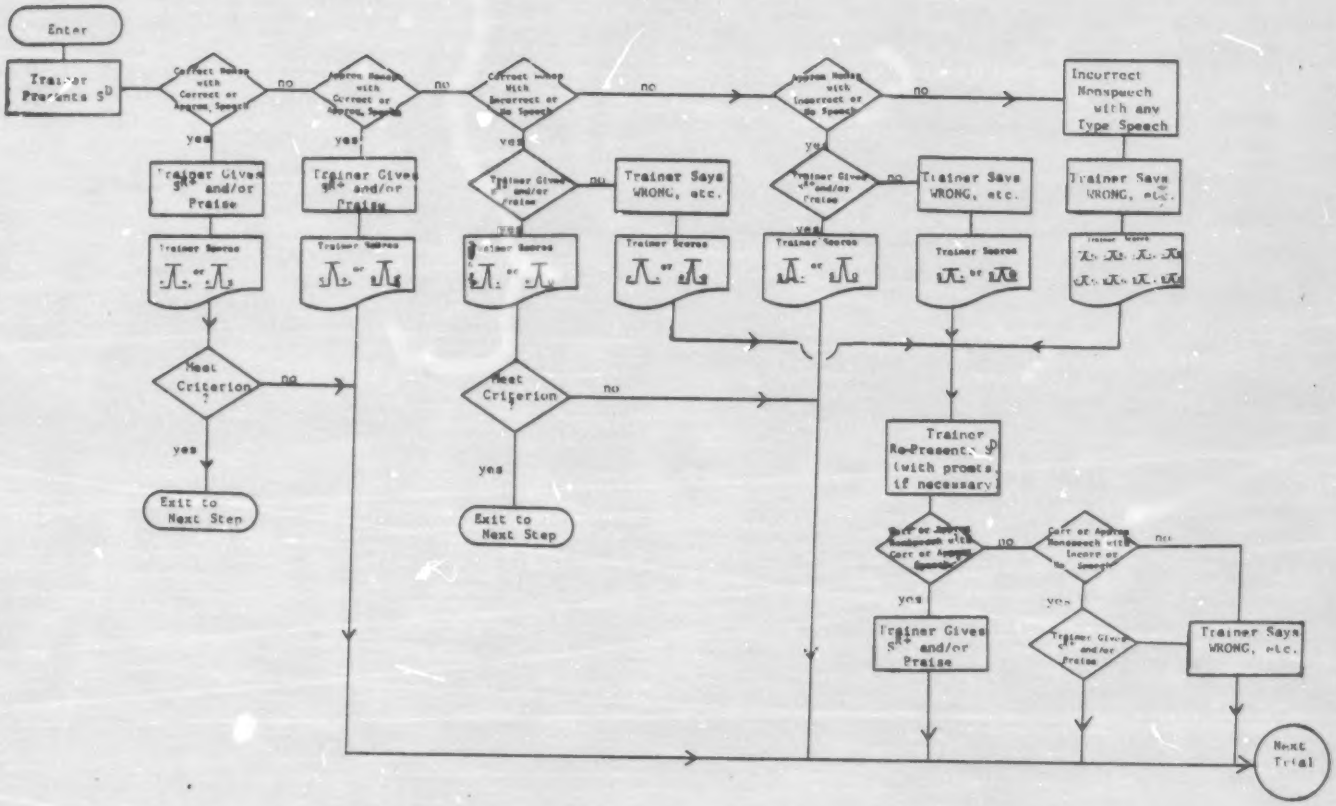
Follow the procedure shown in Figure 11 when training students in both the speech and nonspeech modes concurrently. The use of this correction procedure allows for development of both the speech and nonspeech responses within the same training session.

The far left-hand box of Figure 11 indicates the presentation of a discriminative stimulus (S^D) which might be a question (e.g., WHAT IS THAT?), a command (e.g., POINT TO THE CAR), or the display of an object or action (cutting, pasting). It is possible that a student in this Level will speak and point intelligibly for a few words. If this occurs, the trainer should reinforce (S^{R+}) the student and score (+$\wedge$+) indicating correct responses took place in both modes. The trainer then observes whether the correct responses completed the criterion level of performance for the Step, or for a Phase within the Step. If it did, the student is advanced to the next Phases within the Step, or is moved to the next Step in training. If not, the trainer moves to the next trial on the scoring sheet and presents the next S^D.

On many occasions, the student may use an intelligible and correct pointing response, but the speech response is judged to be only partially correct. For example, a student may clearly point to the popcorn symbol card while saying "puh" or "puhpuh." Or, a student may point to the shoe symbol card perfectly, and say "uh." These responses should also be reinforced, and may also count toward criterion. The trainer should score (+$\wedge$S) on the data sheet for these responses.

Conversely, the student may give a partially correct pointing response simultaneously with some type of a partially correct speech response or (although unlikely) with a clearly articulated speech response. Here the trainer must decide whether the partially correct nonspeech response is an improvement over previous attempts, or whether it is the same or worse than the previous efforts. If the partially correct pointing response is an improvement, the trainer reinforces and praises the student, thus shaping

Figure 11: Training and Correction Procedures for Level B Students



the student toward a more correct response. In this case, the trainer scores (S/\ ) (for "shaping" of the point), and either (/\+) or (/\S) to note the speech response which occurred with it. Thus, a completed interval appears as (S/\+) or (S/\S). These responses would not count toward criterion.

Depending on the speech skills of a student, he/she may use a correct, or approximated point, without saying anything, or a speech response that is worse than previous attempts. In these cases, the trainer must judge if the responses should be reinforced. Whether or not these responses are reinforced is dependent on the skills and past responses for each student. If the student has taken a long time to finally point correctly, or show even modest improvement, the trainer may wish to reinforce the response even though the speech component was not acceptable. Other students will vocalize with most of their pointing responses, but they will use one or two symbol cards which are never accompanied with a sound. If these pointing responses are not reinforced, the students are likely to stop using the nonspeech part of the response as well. When the trainer chooses to reinforce these responses, they are scored as (+/\0), (S/\0), (+/\- and (S/\-) respectively. If, however, a student has <u>always</u> used speech with a particular symbol card, or has recently begun to use better speech attempts with the card, the trainer may want to reinforce the occasional trial where no speech response occurred. If the responses are not reinforced the trainer scores (S/\0) and (S/\-) as shown before, or (≠/\0 and (≠/\-) to indicate these trials may not count toward criterion. The correction procedure is then initiated.

NOTE: The slash through the nonspeech score is a cue to the trainer to not count this trial when tallying the sessions number correct at the completion of the session.

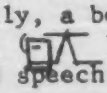
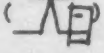
All other types of responses shown in Figure 11 <u>should not</u> be reinforced. These responses involve combinations which include either an incorrect or no pointing response. A response with an incorrect or missing pointing component is not reinforced, regardless of the speech produced. Incorrect responses may include mislabeling an object or action, using an incorrect pronoun, adjective, preposition, using improper syntax in the more lengthy responses, pointing to the wrong object (in the case of certain receptive training skills), or giving a partially correct pointing response which is not better, or is worse than the previous responses.

No-response is scored (for either response mode) if the student does not respond within 10 seconds of the S^D presentation in that mode.

When incorrect or no-responses occur, the trainer must say something to the student, indicating that the response is not correct. Such verbal statements as WRONG, LET'S TRY IT AGAIN, are encouraged. Loud, punitive or derogatory statements (e.g., NO) should not be used. Usually, a flat, matter-of-fact tone of voice, clearly different from the delight and excitement the trainer conveys after correct or partially correct responses is sufficient.

As shown in Figure 11, the trainer scores minus (-) for an incorrect response and (0) for a no response on the left of the grid for these pointing components.

Following the re-presentation of the S^D, the trainer should praise the student (and give tangible reinforcers if necessary) if a more appropriate response follows the correction; then proceed to the next trial on the scoring sheet. If the student still produces an incorrect or no-response following the correction, the trainer says nothing and goes on to the next trial.

NOTE: Only the student's first response needs to be recorded on the data sheet. Responses following the correction procedure do not count toward criterion and need not be scored. If the trainer wishes to note that the student did the second response correctly, a box may be placed around the corrected component; () for corrected points or () for corrected speech.

Whatever the speech skills of the student, the trainer will need to monitor these responses constantly, and continually upgrade the required responses as the student's skills allow. It is recommended that the trainer routinely transcribe the student's speech during the training trials (once per week for some students; once per month for other students). This will allow the trainer to gather specific data that will be useful in analyzing the student's progress. This analysis may help to determine if the speech is improving, what contingencies need to be added or changed, and whether specific vocalizations are being paired with specific symbol cards.

The reinforcement contingencies for this training are shown in outline form on Table 5. This Table describes also what the student's actual responses might be, and whether that response combination should count toward criterion. The trainer has options in groups III and IV because reinforcement contingencies vary from student to student and from one response to another. In general, an intelligible, corre[illegible] pointing response is still reinforced.

Group III responses represent special reinforcement consideration for students for one reason or another. It is unlikely that a severely retarded student will understand the sentence, "You pointed to the right card, but your speech is wrong," therefore, a reinforcer delivered for the correct point may reinforce the incorrect speech as well. In order to avoid this problem, the trainer must look at the two responses working together as a unit to determine whether to reinforce. For some students, this will cause no problems because they say the same gross approximation for all responses.

In some cases, a student may occasionally use a clearly articulated speech word out of context with a pointing response. For example, when the trainer presents a shoe for labeling, the student may sign or point to "shoe" but say "cookie." Because these responses may confuse a listener they are recorded (+ -) and should not be reinforced or counted

Table 5

Response Contingencies in Level B

GROUP	RESPONSE	SCORE	CONTINGENCY	CRITERION
I	Correct understandable point used with correct understandable speech	+/+	Reinforce	Counts
	Correct understandable point used with correct but unclear (or prompted) speech	+/S	Reinforce	Counts*
II	Correct but unclear (or prompted) point used with correct understandable speech	S/+	Reinforce	Does not Count
	Correct but unclear (or prompted) responses in both modes	S/S	Reinforce	Does not Count
III	Correct understandable point used without any speech	+/O	May Reinforce or Correct**	May count only if reinforced
	Correct understandable point used with incorrect speech attempt	+/-	May Reinforce or Correct	May count only if reinforced
IV	Correct but unclear (or prompted) point used without any speech	S/O	May Reinforce or Correct	Does not Count
	Correct but unclear (or prompted) point used with incorrect speech attempt	S/-	May Reinforce or Correct	Does not Count
V	Incorrect point used with correct understandable speech	-/+	Correct	Does not Count
	Incorrect point used with correct but unclear (or prompted) speech	-/S	Correct	Does not Count
	Incorrect point used with incorrect speech attempt	-/-	Correct	Does not Count
	Incorrect point used without any speech attempt	-/O	Correct	Does not Count
	No point response but correct understandable speech	O/+	Correct	Does not Count
	No point response but unclear (or prompted) correct speech	O/S	Correct	Does not Count
	No point response but an incorrect speech attempt	O/-	Correct	Does not Count
	No response in either mode	O/O	Correct	Does not Count

*If prompted, this score may not count toward criterion

**"Correct" means the trainer initiates the Correction Procedure discussed in the manual

toward criterion. The trainer should show (on the scoring form) that a response with a (+) nonspeech score is not counted toward criterion by making a slash through the nonspeech score (i.e., (+/-)).

In other cases a student may pair a specific vocalization with a particular word such as the student who always said "puhpuh" for puzzle. Even though these vocalizations sound very little like the correct articulation of the word, they should be encouraged and reinforced. If the trainer judges this specific vocalization is in fact that student's "word," the student may be required to use that word with the point to the symbol card for each trial in order to be reinforced. If the student did say "puhpuh" and point correctly for puzzle, the response would be scored as (+S) and reinforced. If, however, the student said nothing, or said "gue," while pointing correctly for puzzle, the responses could be scored as +0 and (+-), respectively, and neither would be reinforced. Again if the trainer chose not to reinforce the responses, a slash, (/0) or (/-), should be drawn through the nonspeech score to indicate those scores cannot count toward criterion.

There are instances where students will begin to show steady progress in the speech approximations given for a certain word because of the shaping or vocal stimulation procedures used by the trainer. When this occurs, the trainer will need to record any speech which is worse than previous attempts but accompanying a good nonspeech response, as (+-). Again, use the slash to remove that correct nonspeech from the tally of "number correct" for criterion purposes (/-).

Finally, the trainer should be aware that students who have paired vocalizations or verbalizations consistently with their pointing during noun labeling and/or requesting objects, may not use any speech during "yes"/"no" training. A good rule of thumb in this case is to reinforce the nonspeech response if (+) or (S) and use some type of vocal stimulation to encourage future vocalizations with those words. Remember, Level B students do not need to accompany <u>every</u> point with a vocalization.

Group IV responses present reinforcement problems similar to those for Group III. None of these responses, however, count toward criterion because of the (S) pointing score.

<u>Criterion Performance</u>

It is important to remember that criterion to exit from a Step or Phase can be based on the nonspeech(+) score alone. The trainer may wish, however, to include speech in the criterion for some students. When speech is to be included as part of criterion, the student's performance should be:

1. Achieving 80 percent or higher intelligible independently correct responses, where the pointing was accompanied by vocalizations, within a training session; or,

2. Producing 12 consecutive intelligible, correct responses where the pointing was paired with a vocalization, within a series of trials in a training session.

The trainer may wish to prolong training on a particular step, if the student's speech has shown a large recent gain. This is done to obtain the best "total" response possible. With some students, however, the added pressure to perform in the speech mode may cause either the speech, or the pointing, to become worse.

The trainer must become familiar with this Level's Training and Correction Procedure before beginning to train students in this program. The success of the system depends largely on the trainer's skills in observing the student and in applying effective consequences to both modes operating together. The trainer should have a good grasp of shaping, fading, prompting, and putting-through techniques and have an overall understanding of how to identify appropriate consequences. If the trainer is not experienced with the use of the behavioral techniques, we suggest consultation with a person who is knowledgeable of these techniques. Possibly the trainer may wish to refer to a basic text on the techniques of operant conditioning. The trainer should practice with another adult in using the Training and Correction Procedure before beginning the program with a student.

STEP 1

(Object Naming)

GENERAL INSTRUCTIONS

Training Goal

The training goal is to teach expressive labeling (by pointing and speech as possible) of 16 items. This Step is the student's introduction to the concept of reference (attaching a word-label to an object, or event).

Training Items

Select 16 items which are familiar to the student. It is most important to choose items the student encounters every day and would likely enjoy using. This will increase the student's contact with the items, reinforce the formal training, and allow the same items to be used in subsequent training. Remember that the symbols used will remain on the student's board throughout training on further Steps. In order to conserve the space on the board, the trainer should be aware of what items may be needed in later Steps and train these labels in this first Step. Plan to get as much "mileage" as you can from the space and symbols you have. In Step 4, the student will be taught the phrase "want (label)." It is important that he/she have symbols for functional, desired items so that he/she really does want the item he/she requests.

Communication Board Display

The symbols used for Step 1 vary in size according to the individual student's visual and motor skills. A student with poor vision and/or fine motor problems may start with symbols drawn on 3" x 5" cards. If the student points and sees well, 1" x 1" symbols may be used. Some students may have their symbols decreased in size as they progress through the program and their motor and visual discrimination skills improve.

Table 6 shows the symbol placement on the board for various stages of Step 1. When adding new symbols during training, previously trained symbols should remain in the same order, though they may be moved closer together. When planning symbol placement for Step 1, an attempt should be made to group the symbols categorically; that is, food symbols in one area, clothing in another, toys in another, etc.

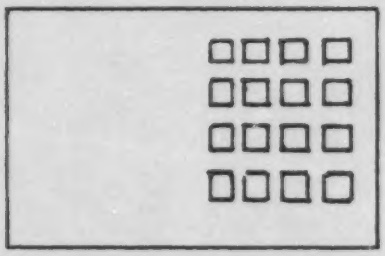
Use of the Trainer's Board for Step 1

The trainer will have a board constructed of the same materials as the student's board. The trainer's board contains all symbols needed to train Steps 1 through 9 of the program, not just the symbols necessary for this Step. Each trainer needs to have the same object (and verb) symbols as each of the students. Remember, because a trainer may be seeing more than one student, the positions of these symbols will not be able to match exactly those of the student's symbols.

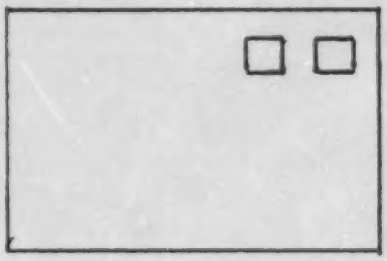
Table 6

Step 1
STUDENT BOARD DISPLAYS

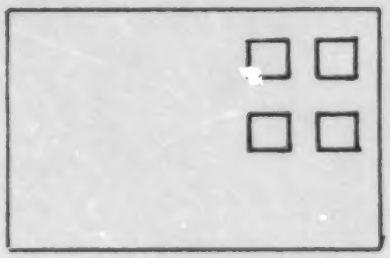
Skill test



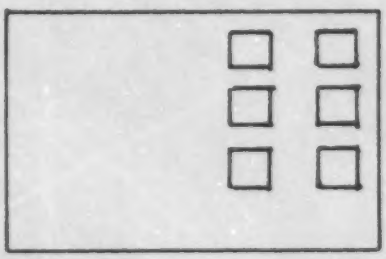
1st and 2nd symbols



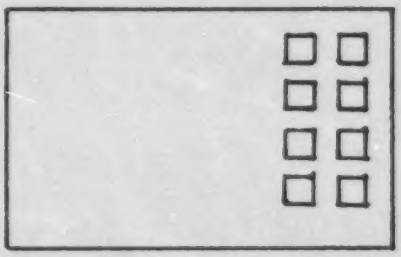
3rd and 4th symbols



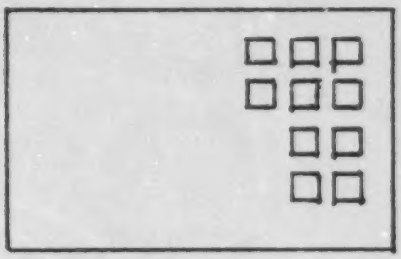
5th and 6th symbols



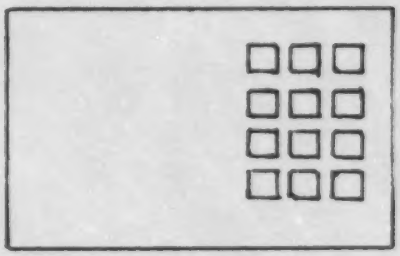
7th and 8th symbols



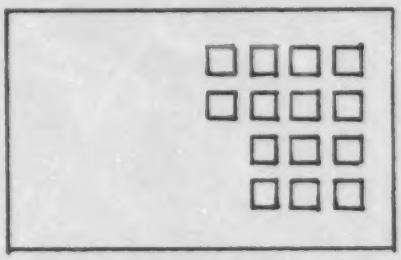
9th and 10th symbols



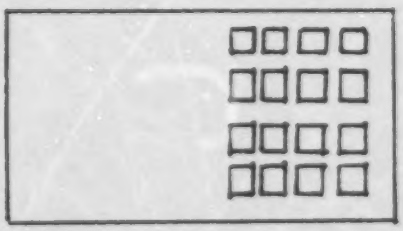
11th and 12th symbols



13th and 14th symbols



15th and 16th symbols



A diagram of the symbol position on a trainer's board is shown in Figure 12. The symbols needed to train Step 1 have been shaded. Employ simultaneous speech and pointing whenever possible. Remember when saying the word "that" or "this" in the stimulus question, point to the actual object, not a board symbol. Be sure to position the trainer's board within view of the student but do not cover the student's board.

Procedures

Training. Use the general Total Communication Procedures presented earlier. The data collection and correction procedures you use will depend on the speech skills (Level) of the individual student receiving training (see pages 26 through 40 describing the total communication Levels). The other training instructions (stimulus presentation, training order, etc.) remain the same regardless of what the student's speech skills are. The specific application of the Total Communication Procedure for Step 1 follows.

Figure 13 presents a flow chart indicating the order of training to proceed through this Step. All Level A and B students progress through the Step in the same order. The Step is begun by administering the Skill Test and training, if necessary, with the trainer asking the question "What's that?" in speech and board simultaneously. This training is called Step 1a. The Step is then retested (and retaught if needed) with the trainer using speech alone (Trainer's board is not used) to ask "What's that?". This training is called Step 1b. Step 1c is then probed (and taught) with the trainer using only the board to ask the question. The expectations for the student's responses remain the same through all three parts of the Step.

Criterion. Move the student through Step 1 (see the Figure 13 Flow Chart) when criterion performance is met. Criterion performance is 80% or more correct responses, or 12 consecutive correct responses, in one session. When a student responds at this level on a Skill Test, he/she may move on to the next Skill Test (1a, 1b, 1c, or 2a). When he/she responds at criterion during training, he/she may move on to either a new word group or a Skill Test.

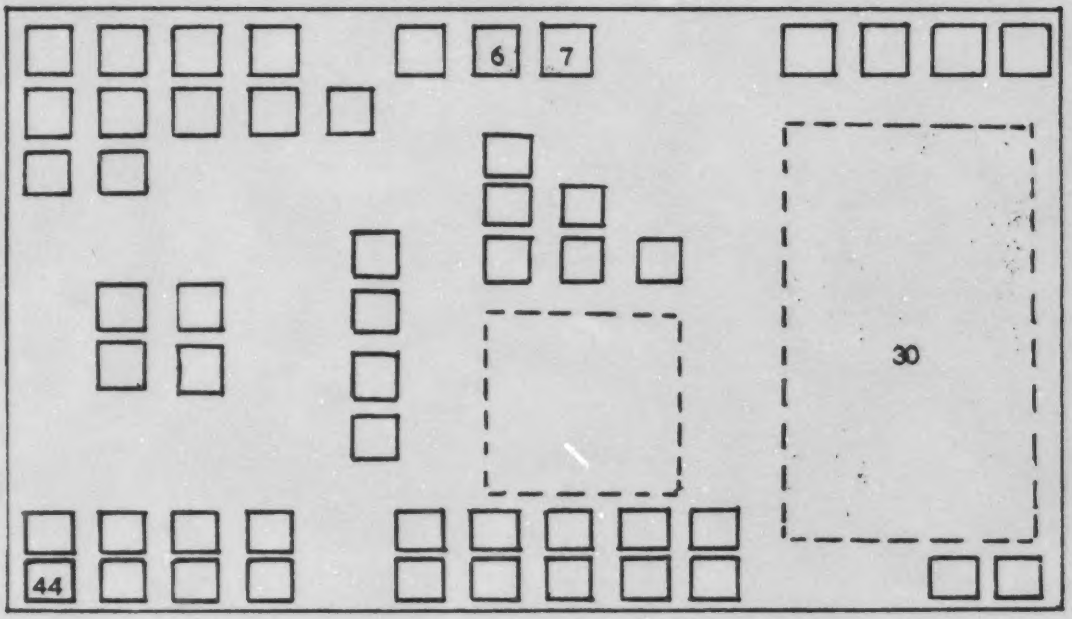
If the student is severely hearing impaired, speech alone (Step 1b) is not trained. Training with this student should go from Step 1a to Step 1c.

Remember that even though the trainer may be using speech alone (1b) or board alone (1c), the student is always expected to use his board accompanied by the best vocalizations he/she can produce.

Percentage tables may be found in Appendix A. If a student makes 12 consecutive correct responses, it is unnecessary to complete the rest of the trials listed on the scoring form either for a test or training. When this occurs, compute the percentage by counting the number of correct responses, divide that number by the total number of trials presented, and multiply by 100.

Figure 12

Trainer's Board for Step 1*



6. good
7. wrong
30. nouns
44. what

* See Figure 4 for full discription of the Trainer's Symbols.

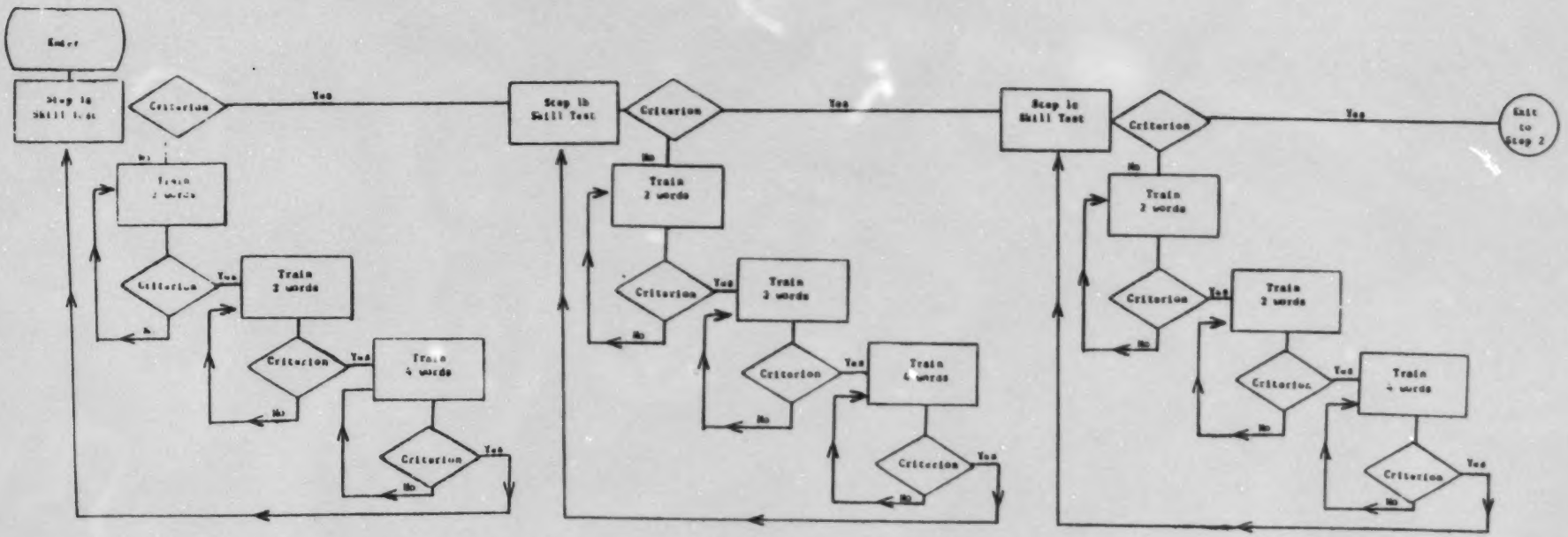


Figure 13: Order of Training for Step 1
of the Communication Board Program

SPECIFIC INSTRUCTIONS

STEP 1A: TRAINER USES SPEECH AND BOARD

Skill Test Instructions

This step has a Skill Test to be given before beginning training and after training on each set of four items. When the Skill Test is being given, all 16 symbol cards must be on the board as described in Table 6. Later in training, this may necessitate replacing the symbols between the last training session and the Skill Test administration. The trainer may also want to use smaller symbols during administration of the Skill Test than those used during training.

When giving the Skill Test, present all 16 items, one at a time. Only the item being tested should be in view. The remaining items should be placed nearby, out of the student's sight. Each item is presented twice, making a total of 32 trials. No item is presented twice in a row. For each trial, the trainer may either hold the item or place it in view of the student. The trainer points to the symbol for what on the trainer's board when saying "WHAT," then points to the object (not a symbol card) while saying "THAT."

NOTE: Use the Total Communication Procedures when giving the Skill Test. This means that if the student does not respond or responds incorrectly, he should be corrected as described in the Levels. The trial is re-presented, giving the student the opportunity to make a correct response. Example trials from the Skill Test 1a are shown in Tables 7 and 8 (Figures 14 and 15) for the two Levels. Pay particular attention to the Level which is used with your student.

Scoring Responses for the Skill Test

After the trainer has given the Skill Test, using both speech and board together (Step 1a), the number of correct (+), correct point with a conflicting vocalization (≠), incorrect (-), shaped or prompted (S), and no response (0) scores are counted for board responses (x ⌐¬). For students on Level B, the speech responses are counted, too. They are scored as correct (+), incorrect (-), shaped or prompted (S), or no response (0) on the lower right hand area of the scoring grid (⌐¬x).

The percentages are derived by dividing each score by the total number and multiplying that number by 100. To assist in figuring the percentages, conversion tables are presented in Appendix A for all total trial combinations found in the nine Steps of the Communication Board manual.

The Skill Test Scoring Form for Step 1 has 32 trials. The Level A student, Ralph, (Figure 14) responded to 22% of the trials correctly. He does not vocalize and his board responses were scored as 7 (+), 12 (-), 3 (S) and 10 (0).

Table 7
Example Trials* for Step 1a Skill Test
Level A Student
Communication Board

Trial 1	
(Places student's board on table or lap tray. Places trainer's board on table close to student.)	
hands ready / HANDS READY.	(Places hands on table beside board.)
(Holds ball in front of student.) what (points to ball) / WHAT'S THAT?	(no response after at least 5 seconds in either mode.)
YOU DIDN'T ANSWER. THIS IS BALL. (Points to symbol for ball on student's board. Scores [0/] on Skill Test Scoring Form.)	
what (points to ball) / WHAT'S THAT?	(no response) / (no response)
(Does nothing, goes on to the next trial.)	
Trial 1	
HANDS READY.	(Places hands on table beside board.)
(Holds a car in front of student.)	
what (points to car) / WHAT'S THAT? (Prompts the student to point to car symbol)	car / (no response)
right car / THAT'S RIGHT. THIS IS A CAR. (Puts student on back. Scores [0/] on Skill Test Scoring Form.)	
(Here the trainer gave the student a prompt to help initiate the response after two consecutive no responses. This prompt will be faded in later trials.)	
Trial 4	(Student's hands are in lap.)
(Holds up radio.)	
what (points to radio) / WHAT'S THAT?	(no response after 5 seconds)
IT'S A RADIO. (Points to radio symbol on student's board. Scores [0/] .) LET'S TRY AGAIN.	
(Holds up radio.) what (points to radio) / WHAT'S THAT?	radio / (no response)
good / GOOD JOB! YOU GOT IT RIGHT THAT TIME.	
Trial 7	(Student's hands are on table next to board.)
hand ready like / YOU HAVE YOUR HANDS READY. I LIKE THAT!	
(Holds up hat.) what (points to hat) / WHAT'S THAT?	hat / (no response)
YEAH RALPH! (claps hands) IT IS A HAT. YOU GOT IT RIGHT. (Scores [+/] on Skill Test Scoring Form.)	
Trial 10	(Places hands in lap.)
good / YOUR HANDS ARE READY. GOOD.	
(Holds up crayon.) what (points to crayon) / WHAT'S THAT?	hat / (no response)
WRONG / WRONG. (Points to crayon symbol on student's board.) IT'S A CRAYON. (Scores [-/] on Skill Test Scoring Form.)	
(Holds up crayon.) what (points to crayon) / WHAT'S THAT?	crayon / (no response)
MAKE RHYTHM!	
Trial 13	
hands ready / HANDS READY.	(Student places hands on table next to board.)
(Holds up ball.) what (points to ball) / WHAT'S THAT?	car / (no response)
wrong / WRONG. IT'S A BELL (points to bell symbol on student's board.) Scores [-/] on Skill Test Scoring Form.) LET'S TRY AGAIN.	
(Holds up ball.) what (points to ball) / WHAT'S THAT?	car / (no response)
(Says nothing. Goes to next trial.)	

*Example trials for this table correspond to those with asterisks (*) on the

Hearing Signing

Figure 14
Skill Test Scoring Form for Step 1

Student Ralph Date Jan. 9, 1976 Session # 1

Trainer Steve

Circle Speech Level: (A) B C Circle Trainer & Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

In blanks 0-16 list the 16 items that are used in Step 1; then list them again (not in the same order) in blanks 17-32.

	Item	Score		Item	Score
*1.	ball	±R	17.	book	±R
2.	pop	±R	18.	blueys	-R
*3.	car	S R	19.	car	-R
*4.	radio	±R	20.	hat	-R
*5.	hat	±R	21.	bell	S R
6.	book	-R	22.	ball	±R
7.	spoon	±R	23.	plate	±R
8.	bubbles	±R	24.	crayon	±R
9.	crayon	-R	25.	cookie	-R
*10.	candy	-R	26.	pop	-R
11.	plate	±R	27.	shoe	-R
12.	blueys	S R	28.	radio	±R
13.	shoe	±R	29.	bubbles	±R
14.	coat	±R	30.	coat	±R
*15.	bell	-R	31.	spoon	±R
16.	cookie	-R	32.	candy	-R

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech					Speech				Acceptability	
	+	/	-	S	0	+	-	S	0	+	0
Score	7		12	3	10						
Percent	22		38	9	31						

* Example trials shown in Table 7

Table 8

Example Trials* for Step 1a Skill Test
Level B Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Trial 1	
(Holds up brush.) what (points to brush) / WHAT'S THAT?	brush / BUH
good brush / GOOD JOB! IT'S A BRUSH! GOOD TALKING, TOO! (Scores [+/S] on Skill Test Scoring Form.)	
Trial 3	
(Holds up perfume.) what (points to perfume) / WHAT'S THAT?	water / UH
wrong / WRONG. IT'S PERFUME. (points to perfume symbol on student's board. Scores [-/S] on Skill Test Scoring Form.)	
hand ready / HANDS READY.	(Student places hands in lap.)
what (points to perfume) / WHAT'S THAT?	perfume / UH
OKAY! RIGHT THAT TIME.	
Trial 10	
(Holds up puzzle.) what (points to puzzle) / WHAT'S THAT?	puzzle / (no response)
THAT'S RIGHT! IT'S A PUZZLE! (Scores [+/O] on Skill Test Scoring Form.)	
CAN YOU SAY "PUZZLE" (points to student's symbol for puzzle.)	puzzle / PUH PUH
HEY! THAT'S GREAT! (Lets student play with puzzle.)	
(The student did not vocalize on her first response. The trainer reinforced the pointing response but went directly into vocal stimulation. Eventually, it is assumed the student will vocalize for this symbol without the stimulation.)	
Trial 16	
(Holds up shirt.) what (points to shirt) / WHAT'S THAT?	shirt / COAT
wrong / WRONG. SAY SHIRT (points to shirt symbol on student's board. Emphasize the word SHIRT. Scores [+/-] on Skill Test Scoring Form.)	(points with trainer to shirt symbol) / SH
OKAY, HANDS READY.	(Student places hands in lap.)
what (points to shirt) / WHAT'S THAT?	shirt / SH
WOW! THAT WAS A LOT BETTER!	
(Notice that the trainer recorded a slash through the plus nonspeech score. This shows the student used conflicting responses and will not allow that trial to be counted to criterion.)	

*Example trials for this Table correspond to those with astericks (*) on the Example Skill Test Scoring Form, Figure 15.

Manual Signing

Figure 15

Skill Test Scoring Form for Step 1

Student Ann Date 1-14-76 Session # 1

Trainer Julie

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

In blanks 6-16 list the 16 items that are used in Step 1; then list them again (not in the same order) in blanks 17-32.

	Item	Score		Item	Score
#1.	brush	+/S	17.	cookie	+/S
2.	water	-/O	18.	water	-/O
#3.	perfume	-/S	19.	coat	-/+
4.	paper	-/O	20.	toothbrush	o/O
5.	pencil	o/S	21.	paper	+/O
6.	juice	+/S	22.	glasses	+/S
7.	toothbrush	o/S	23.	purple	+/S
8.	cookie	-/S	24.	juice	+/O
9.	coat	+/+	25.	candy	o/O
#10.	purple	+/O	26.	brush	+/S
11.	milk	o/S	27.	pants	-/S
12.	glasses	o/S	28.	pencil	o/O
13.	candy	+/S	29.	shirt	-/-
14.	radio	-/S	30.	perfume	-/S
15.	pants	-/O	31.	milk	+/O
#16.	shirt	#/-	32.	radio	-/S

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (O). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (O).

Percent Summary for Session

	Nonspeech					Speech				Acceptability	
	+	/	-	S	O	+	-	/	O	+	O
Score	12	1	12	0	7	2	2	16	12		
Percent	38	3	38	0	22	6	6	50	38		

*Example trials shown in Table 8.

Ann, on Level B, gave 38% correct responses (Figure 15). Her board responses were scored as 12 (+), 1 (≠), 0 (S) and 7 (O). Trial 16 on Figure 15 and Table 8 shows a (≠). This shows that Ann pointed to the correct symbol (shirt) but gave a conflicting vocalization ("coat").

Begin (or continue) training on Step 1a if the student's score on the Step 1a Skill Test was below 80% correct or if fewer than 12 consecutive correct responses were scored. If criterion was reached on the Step 1a Skill Test, move on to Step 1b of the program.

Training Instructions

1. Place the first two symbols on the student's board as described in Table 6. Place the trainer's board in full view of the student. The first two items selected for training should be particularly motivating to the student.

NOTE: Objects labeled correctly on both trials during the first administration of the Skill Test should be symbolized on the board without formal training. That is, these symbol cards need not be removed from the display during training. This is likely to occur during later Skill Tests, but not necessarily after the first.

2. Put both symbolized items in front of the student, but not on the trainer's board or the student's board.

3. Point to the "what" symbol on the trainer's board while saying "WHAT," then to the object, while saying "THAT." The student must give the correct label for the item to be given credit for a correct response (see the response definitions given earlier in the Total Communication section). Present the items in the order shown for that session on the Scoring Form for Step 1. Remember that you may use either Type 1 or Type 2 Scoring Forms. The example trials, Tables 9 and 10, illustrate what to do during trials when the student does not respond correctly.

Table 9, Figure 16 (Type 1 Scoring Form) and Figure 17 (Type 2 Scoring Form) show example trials for Step 1a training for a Level A student. For illustration purposes examples are shown on both Type 1 and Type 2 scoring forms. Since the trial numbers do not always match on the two types of forms, the first number shown will be the trial number for a Type 1 Form and the second number corresponds to Type 2 Form. The examples show how to handle trials that are incorrect (trial 1/1), no-response (trial 3/6), prompted (trial 3/8) and correct (trial 4/10). In real life, you will never use both types of Scoring Forms to record data for the same session. Both Forms are shown here simply for the trainer to see how they are used.

Figures 18 and 19 and Table 10 show Step 1a training data for a Level B student. Example trial 1/1 shows what happens when a student points

Table 9

Example Trials* for Step 1a Training
Level A Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Type 1 Trial 1 Type 2 Trial 1	
good / HANDS READY. GOOD	(Places hands in lap.)
(Holds up cookie.) what (points to cookie) / WHAT'S THAT?	book / (no response)
wrong / WRONG. IT'S COOKIE. (points to cookie symbol on student's board. Scores [-/] on Step 1 Scoring Form.)	(Student points to cookie symbol with teacher.)
OKAY. HANDS READY.	(Student places hands in lap.)
what (points to cookie) / WHAT'S THAT?	cookie / (no response)
cookie / GREAT! IT IS COOKIE. (Gives student a piece of cookie.)	
Type 1 Trial 2 Type 2 Trial 6	
	(Student has hands ready.)
(Holds up cookie.) what (points to cookie) / WHAT'S THAT?	(no response after at least 5 seconds.)
IT'S A COOKIE (points to cookie symbol on student's board. Scores [0/] on Step 1 Scoring Form.)	
what (points to cookie) / WHAT'S THAT?	book / no response
(Says nothing. Goes to the next trial.)	
Type 1 Trial 3 Type 2 Trial 8	
(Holds up book.)	
what (points to book) / WHAT'S THAT? (prompts student to point to book symbol.)	book / (no response)
GOOD WORK! THAT'S RIGHT. (Scores [S/] on Step 1 Scoring Form.)	
Type 1 Trial 4 Type 2 Trial 10	
(Holds up book.)	
what (points to book) / WHAT'S THAT?	book / (no response)
WAY TO GO! (pats student on back. Scores [+/] on Step 1 Scoring Form.)	

*Example trials for this Table correspond to those with astericks (*) on the Example Scoring Forms, Figures 16 and 17 .

Board Signing

Type 1

Figure 16
Scoring Form for Step 1

Student Ralph Date 1/16/76 Session # 7

Trainer Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

This scoring form can be used for either the one-pair or two pair presentations described in Step 1 training procedures. For training pairs of items, assign numbers (1) and (3) to the first item (for a total of 32 trials); assign numbers (2) and (4) to the second item in the pair (for the remaining 32 trials). When training all four items, assign each to a single number (16 trials each).

List Items Used: (1) cookie (2) book (3) cookie (4) book

*1. (1) +/-	17. (4) +/-	33. (1) +/-	49 (3) +/-
*2. (3) +/-	18. (2) +/-	34. (4) +/-	50. (2) +/-
*3. (2) +/-	19. (3) +/-	35. (2) +/-	51. (4) +/-
*4. (4) +/-	20. (1) +/-	36. (2) +/-	52. (1) +/-
5. (1) +/-	21. (4) +/-	37. (3) +/-	53. (3) +/-
6. (1) +/-	22. (4) +/-	38. (4) +/-	54. (2) +/-
7. (2) +/-	23. (1) +/-	39. (3) +/-	55. (3) +/-
8. (3) +/-	24. (2) +/-	40. (1) +/-	56. (1) +/-
9. (4) +/-	25. (2) +/-	41. (3) +/-	57. (4) +/-
10. (2) +/-	26. (4) +/-	42. (2) +/-	58. (2) +/-
11. (1) +/-	27. (2) +/-	43. (4) +/-	59. (4) +/-
12. (4) +/-	28. (1) +/-	44. (1) +/-	60. (1) +/-
13. (3) +/-	29. (1) +/-	45. (2) +/-	61. (2) +/-
14. (2) +/-	30. (3) +/-	46. (1) +/-	62. (3) +/-
15. (4) +/-	31. (2) +/-	47. (3) +/-	63. (1) +/-
16. (3) +/-	32. (3) +/-	48. (4) +/-	64. (4) +/-

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech 0	Speech +	Speech -	Speech S	Speech 0	Acceptability +	Acceptability 0
Score	30		15	9	10					
Percent	47		23	14	16					

Board Signing

* Example trials shown on Table 9

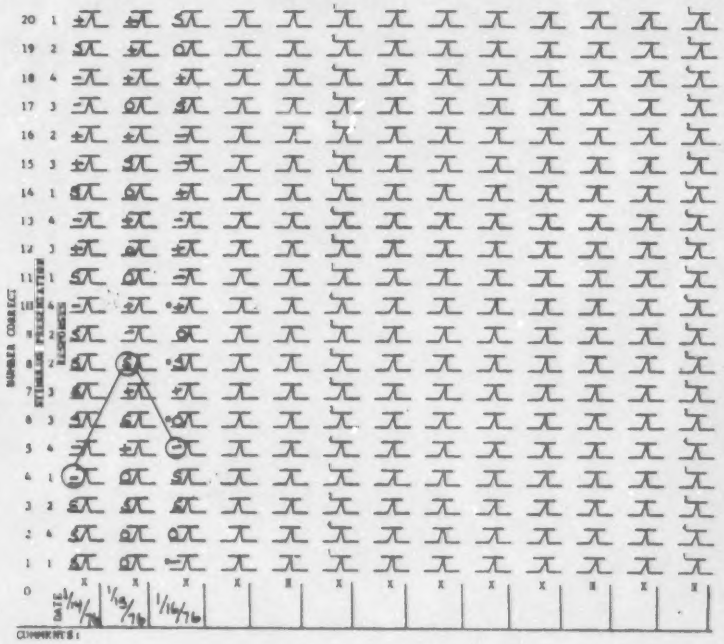
Type 4

Figure 17
Scoring Form for Step 1

Student Ralph Trainer Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items: 1) cookie 2) book 3) cookie 4) book
A: WHAT'S THAT? "Label" Two or Four Items



* Example trials shown on Table 9

Table 10
Example Trials* for Step 1a Training
Level B Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Type 1 Trial 1 Type 2 Trial 1	
(Holds up shirt.) what (points to shirt) / WHAT'S THAT?	shirt / COAT
wrong / WRONG, ANN, SHIRT (points to shirt symbol on student's board and emphasizes SHIRT. Scores [+/\=] on Step 1 Scoring Form.)	
LET'S TRY AGAIN. what (points to shirt) / WHAT'S THAT?	shirt / COAT
(Says nothing. Goes to the next trial).	
(Note: This example shows a student using a conflicting speech response. This resulted in a slash being drawn through the plus score. The trial will not count to criterion.)	
Type 1 Trial 2 Type 2 Trial 6	
(Holds up radio.) what (points to radio) / WHAT'S THAT?	radio / OH
good / GOOD JOB! (Lets student listen to radio. Scores [+/\S] on Step 1 Scoring Form.)	
Type 1 Trial 3 Type 2 Trial 8	
(Holds up radio.) what (points to radio) / WHAT'S THAT?	shirt / OH
wrong / WRONG. IT'S A RADIO (points to radio symbol on student's board. Scores [-/\S] on Step 1 Scoring Form.)	
what (points to radio) / WHAT'S THAT?	radio / OH
MUCH BETTER THAT TIME!	

*Example trials for this Table correspond to those on the Example Scoring Forms, Figures 18 and 19.

Board Signing

Figure 18 Type 1

Scoring Form for Step 1

Student Ann Date 1-15-7 Session # 10

Trainer Julie

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

This scoring form can be used for either the one-pair or two pair presentations described in Step 1 training procedures. For training pairs of items, assign numbers (1) and (3) to the first item (for a total of 32 trials); assign numbers (2) and (4) to the second item in the pair (for the remaining 32 trials). When training all four items, assign each to a single number (16 trials each).

List Items Used: (1) shirt (2) radio (3) shirt (4) radio

*1. (1) ✓	17. (4) ✓	33. (1) ✓	49 (3) ✓
*2. (3) ✓	18. (2) ✓	34. (4) ✓	50. (2) ✓
*3. (2) −	19. (3) ✓	35. (2) ✓	51. (4) ✓
4. (4) ✓	20. (1) ✓	36. (2) −	52. (1) −
5. (1) ✓	21. (4) ✓	37. (3) ✓	53. (3) ✓
6. (1) ✓	22. (4) ✓	38. (4) −	54. (2) ✓
7. (2) −	23. (1) −	39. (3) O	55. (3) −
8. (3) ✓	24. (2) O	40. (1) ✓	56. (1) ✓
9. (4) −	25. (3) ✓	41. (3) ✓	57. (4) ✓
10. (2) O	26. (4) ✓	42. (2) O	58. (2) ✓
11. (1) −	27. (2) ✓	43. (4) ✓	59. (4) ✓
12. (4) ✓	28. (1) −	44. (1) −	60. (1) ✓
13. (3) ✓	29. (1) ✓	45. (2) −	61. (2) ✓
14. (2) ✓	30. (3) ✓	46. (1) ✓	62. (3) ✓
15. (4) ✓	31. (2) ✓	47. (3) −	63. (1) O
16. (3) ✓	32. (3) −	48. (4) ✓	64. (4) ✓

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech +	S	0	Speech +	S	0	Acceptability +	0
Score	31	4	14	9	6	0	4	46	14		
Percent	48	6	22	14	10	0	6	72	22		

* Example trials shown in Table 10

Board Signing

Figure 19 Type 2

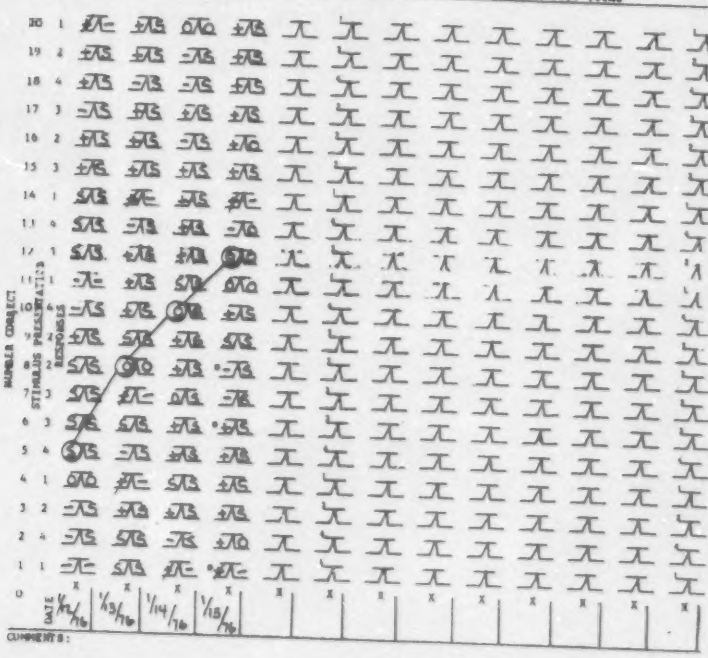
Scoring Form for Step 1

Student Ann Trainer Julie

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items: 1) shirt 2) radio 3) shirt 4) radio

A1 "WHAT'S THAT" "Label" Two or Four Items



* Example trials shown in Table 10

correctly but gives an incorrect vocalization. Trial 2/6 shows a correct point accompanied by a vocalization. An example of an incorrect point accompanied by a vocalization is shown in trial 3/8.

If a student cannot tolerate the 64 trials on a Type 1 Form or the 20 trials on a Type 2 Form in one sitting, the trainer is encouraged to be flexible. Do as many trials as possible, and work on increasing the number of trials the student can tolerate, but do not feel bound to the number of trials shown on the Scoring Form. Trials may also be broken into small sets which are run several times throughout the day.

4. Continue training the first two items until criterion performance is met. Criterion is the same as for the Skill Test -- 80% correct responses or 12 consecutive correct responses in one session. On a Type 1 Form, 80% is 52 correct of 64 possible trials. For a Type 2 Form, 16 correct responses of the 20 possible are required for 80%.

5. After the student reaches criterion on the first pair of two items, select two different items, add these two symbol cards to the student's board and train them to criterion in the same way. When criterion is met on the second pair, combine the four items and train that set to criterion using the same procedure. Review Table 6 for a description of how to add the cards to the board.

6. After the set of four items is trained to criterion, add the remaining symbol cards and give the Step 1a Skill Test again. If the student reaches criterion on the Skill Test for Step 1a, then give Skill Test 1b.

7. If the student does not reach criterion on the Skill Test 1a, remove all but the necessary symbol cards, and train the next four items in the same manner (one pair, then the second pair, then the combined set of four items) using the Board Displays described earlier.

Train to criterion the following items:

1 and 2 (e.g., cookie and ball)

3 and 4 (e.g., hat and crayon)

1, 2, 3, and 4 (e.g., cookie, ball, hat and crayon).

Give Skill Test 1a (trainer uses speech and board together). If criterion is reached, go to Skill Test 1b (trainer uses speech alone). If not, train the items below.

5 and 6

7 and 8

5, 6, 7 and 8

Give Skill Test 1a. If criterion is reached, go to Skill Test 1b; if not, train the items below.

9 and 10

11 and 12

9, 10, 11, and 12

Give Skill Test 1a. If criterion is reached, go to Skill Test 1b; if not, train the items below.

13 and 14

15 and 16

13, 14, 15 and 16

Give Skill Test 1a. If criterion is reached, go to Skill Test 1b. If not, the trainer has three options. The items may be regrouped to create new pairs and sets of items. Train the new pairs and sets until the student reaches criterion on the Skill Test. Or, it may help some students to rearrange the symbol placement. You may either regroup the items or rearrange the symbols. Doing both at once could be too confusing for the student. If either of these options is chosen, remember that all 16 symbols remain on the student's board. Finally, if the trainer feels the student's failure to achieve criterion does not mean he/she can't make progress on Step 2, go on to Step 2. After criterion is met on Step 2 (a, b, and c), retrain the student on Step 1. For some students, this procedure may aid in reaching criterion on Step 1.

STEP 1b: TRAINER USES SPEECH ALONE

Step 1b is trained very similarly to Step 1a. One exception is that the trainer's board is not used to ask the question WHAT THAT?" (i.e., trainer says the words but does not point to the symbol cards). This technique is used in order to teach the student to attend to speech used alone. In this way, the student will be able to understand "normal" conversation he/she hears in his/her environment.

The second change from Step 1a is that the student's board display remains constant. All sixteen symbol cards are on the board throughout the Step 1b testing and training. Be sure then, to use the same objects in this part of the Step as were used earlier.

When criterion is reached on the Step 1b Skill Test, training should begin on Step 1c. Refer back to the Figure 13 Flow chart to see exactly how to proceed.

STEP 1c: TRAINER USES BOARD ALONE

Step 1c is exactly the same as Step 1b except that the question "WHAT THAT?" is asked using only board symbols and no speech. All other instructions, reinforcement, correction, and conversation during the sessions may be in either speech alone, or speech and board together. This part of the Step is taught so that the student will learn the concepts behind the graphic symbols more completely, and also to understand peers who may use boards but not talk.

When criterion is reached on the 1c Skill Test, training should begin on Step 2a.

Remember, if the student does not reach criterion after training all 16 items, you can either regroup the training items (or symbols) or go on to Step 2.

SUMMARY FORM FOR STEP 1

Figure 20 shows a sample Summary Form for Step 1a. Step 1a is indicated on the Summary Form by the marks under both "Speech" and "Nonspeech" stimulus conditions at the top of the Form. A new Summary Form is completed for both Steps 1b and 1c. Step 1b is indicated by checking only the "Speech" stimulus condition. Step 1c is indicated by checking only the "Nonspeech" stimulus condition.

Only the percentage of correct responses is entered on the Summary Form. In this example, the Skill Test 1a was given first on January 16, 1976. The student, Ralph, had 22% correct responses. The date the Skill Test is first given is also the date training began.

Training on the first pair of items (cookie and book) began January 19, 1976. Figure 20 shows that Ralph reached criterion on cookie and book during session 9. On session 13, Ralph reached criterion on the second pair (ball and car) with 82% correct. The circle around the percentage score shows that criterion was met by 12 consecutive correct responses.

Criterion was reached on the Skill Test 1a on session 19. Ralph correctly labeled 29 of 32 items without formal training on items 9 through 16. It took this student 19 sessions to reach criterion on Step 1a (trainer using speech and board). This is recorded in the Total Sessions to Criterion blank at the top of the Summary Form. Ralph is now ready for Step 1b (teacher trains in speech alone). When criterion is met on Step 1b, training is begun with the trainer using the board alone, with no speech (Step 1c). Training begins on Step 2 when criterion is reached on Step 1c.

Board Signing

Figure 20

Summary Form for Step 1

Speech Level: A Trainer's Stimulus: Speech and board

Student Ralph Trainer Steve

Date Training Started 1/16/75 Date Training Ended _____ Total Sessions to Criterion 20

Percent Correct Responses Across Sessions

Items	Session # 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Speech Approximations
1(cookie) & 2(book)		30	55	55	30	60	45	70	85												
3(ball) & 4(car)										15	30	75	(82)								
1,2,3,4														90							
5(radio) & 6(hat)																55	(86)				
7(pop) & 8(spoon)																		80			
5,6,7,8																			80		
9( ) & 10( )																					
11( ) & 12( )																					
9,10,11,12																					
13( ) & 14( )																					
15( ) & 16( )																					
13,14,15,16																					
Skill Test	22														59					91	
Date	1/16/76	1/19	1/20	1/21	1/22	1/23	1/23	1/26	1/27	1/28	2/2	2/3	2/4	2/5	2/6	2/9	2/10	2/12	2/13	2/16	

Items Used in Training

1. cookie 5. radio 9. bubbles 13. flannel
2. book 6. hat 10. crayon 14. shoe
3. ball 7. pop 11. candy 15. bell
4. car 8. spoon 12. plate 16. coat

Board Display

		9	10 1 2
		11	12 3 4
		13	14 5 6
		15	16 7 8

(Circled percentages represent criterion based on 12 consecutive correct responses.)

GRAPHING SUMMARY FORM DATA

You may wish to graph progress data as the student progresses through the Steps. Procedures for graphing are shown in Appendix B.

You may also wish to use the Type 2 Scoring Forms for self-graphing, by circling the number correct during each session, and drawing a line from one circle to the next. If Type 2 Forms are used, the trainer is encouraged to also keep more long term graphs to help with viewing progress over longer periods of time.

PROGRAMMING FOR GENERALIZATION

Upon completion of Step 1, a list of trained items should be given to the student's parents, parent-surrogates, teachers and others who have daily contact with the student. Their purpose is to increase the use of the newly taught vocabulary with persons other than the trainer and in environments other than the training area. Whenever it is appropriate and/or functional these persons should present the same items and ask the student "What's that?". Eventually the instruction they use should vary. Gradually, "What's that?" should be replaced by questions which are longer and use other vocabulary. The student should be responding correctly to "What's That?" for several days prior to varying the cue. An example for the vocabulary word puzzle: when the student is in the bedroom, living room, classroom, etc. playing with the puzzle the parent, teacher, etc. could ask "What (are you) play (ing) with?" This will allow the student to use the newly trained word in a functional setting, in addition to increasing his/her receptive vocabulary.

It may be necessary, initially, to reinforce the student with edibles as well as praise. Gradually, reinforcement other than that which would occur naturally, should be avoided. When the student labels pop it would be natural to give him/her a drink of pop. It would not be natural to give the student a drink of pop for labeling shirt. In this instance the student should receive praise and if needed, assistance with his/her shirt.

Throughout training it is likely the same objects are used. When working towards generalization a variety of objects representing each newly trained label should be used. When generalizing the use of the word shoe the student should be encouraged to point to shoe for as many different shoes as possible. Table 11 provides examples of generalization across persons, places and cues. New (non-trained) items and body parts should gradually be added to the list ONLY when the student appears to be maintaining an acceptable level of labeling in the home or school setting for several consecutive days. The trainer should record in the student's file whether or not generalization occurs.

Table 11
Generalization Overview

Suggested Vocabulary To Practice in	Different, appropriate Settings with	Different People Using	Different Verbal Cues STEPS 1 & 3	Different Verbal Cues STEP 2
bed, pillow, blanken, shirt, shoe, socks, pants, gown, ring, hat, necklace, watch, dress	Bedroom	parents, parent-surrogates, unit workers, siblings(?), education staff, peers(?)	What put on What take off What wear there What's over there What sit on (could add you to each cue to lengthen) What's that etc.	Point to _____ Show me _____ Give me _____ Get the _____ Find the _____ Pick up the _____ Where's the _____ (could add student's name, me and articles a, an, the, to lengthen cue)
knife, fork, spoon, sandwich, table, chair, plate, milk, cup, glass, candy, cookie, cake, pop, cracker, chips, peanuts, apple, juice, gum	Kitchen	Any of the above Dining hall staff	What eating with What sit on What are you eating What drinking What's that etc.	Any of the above
toilet, bathtub, washcloth, towel, soap, comb, brush, mirror, lotion, toothbrush, toothpaste	Bathroom	parents, parent-surrogates, unit workers, education staff, siblings(?), peers(?)	What look at What put on What sit on/in What on face What fix hair with What washing with What's that etc.	Any of the above
Any of the above which are appropriate swing, bicycle, TV, radio, ball, truck, crayon, doll, puzzle, block, drum	Any Recreation Area	Any of the above	What have What in your hand What play with/on What listening to What watching What's that etc.	Any of the above
Any of the above which are appropriate pencil, paper, desk, book	Classroom		What's on your desk What writing with/on What's that etc. (could add verbs. ing to lengthen)	Any of the above

STEP 2

(Object Recognition)

GENERAL INSTRUCTIONS

Training Goal

In Step 2, the student is taught receptive identification of the 16 items he learned to label in Step 1. This step concentrates on the dimension of reception (understanding statements and questions).

Training Items

Train the same items as used in Step 1.

Communication Board Display

The student's board is not used during the response for this step. It should be placed nearby so the student can communicate with the trainer. The objects should not be placed on the student's board during the Step 2 Skill Test or training.

Use of the Trainer's Board for Step 2

A diagram of a trainer's board is shown in Figure 21. The symbols needed to train Step 2 have been shaded in this diagram. Use the board as described in Step 1 and in the section entitled Description of the Boards and Symbols.

Procedures

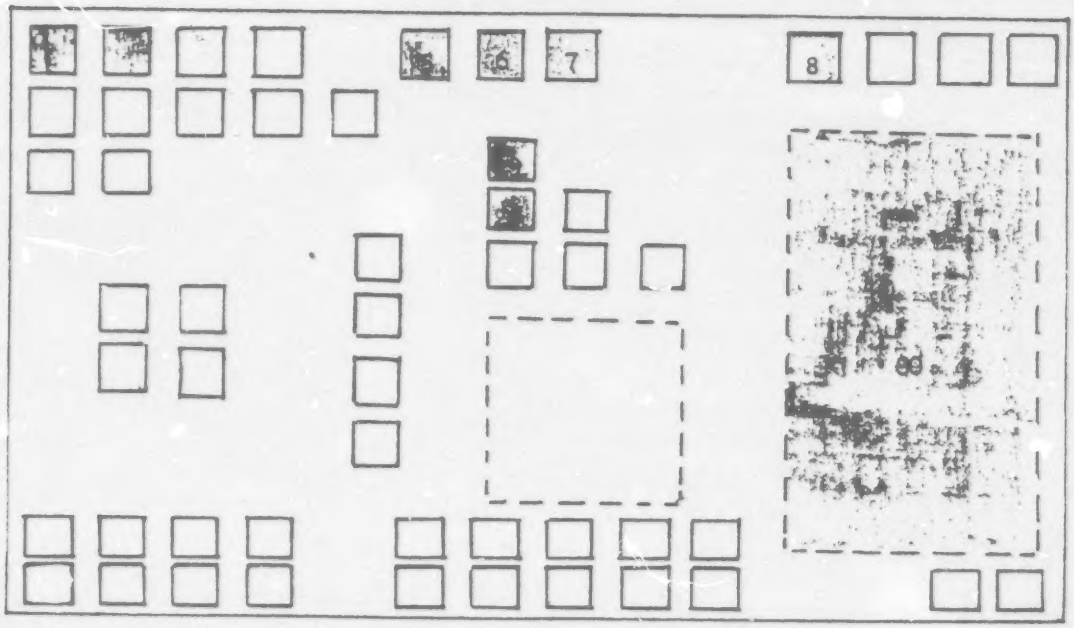
Training. In Step 2, the students are not expected to give an expressive response. This means that, they are not asked to point to a graphic symbol or vocalize in response to the trainer's stimuli. They are asked only to identify the actual objects named by the trainer. They may point to the objects, pick them up, hand them to the trainer, etc. Because the students are not expected to use a "total communication" response in this Step, the trainer should use the Level A Training and Correction Procedure with all students in Step 2. These procedures (including correcting, prompting, shaping, and putting-through) are used any time an incorrect, no response, or partial response situation occurs.

Because the students are not asked to use paired responses, the collection of data is simpler for Step 2 than for Step 1. The trainer scores only one of the four symbols (+, -, 0, S) for any one response. This eliminates the need for the scoring grids on the Scoring Forms for this Step. Example scoring is shown later in this Step.

Figure 22 presents a flow chart indicating the order that all students proceed through Step 2. Just as in Step 1, the Step is taught in three different conditions. The Step is begun by administering the Skill Test

Figure 21

Trainer's Board for Step 2*



1. yes
2. no
5. correct
6. good
7. wrong
8. me
19. give
20. show
30. nouns

* See Figure 4 for full discription of the Trainer's Symbols.

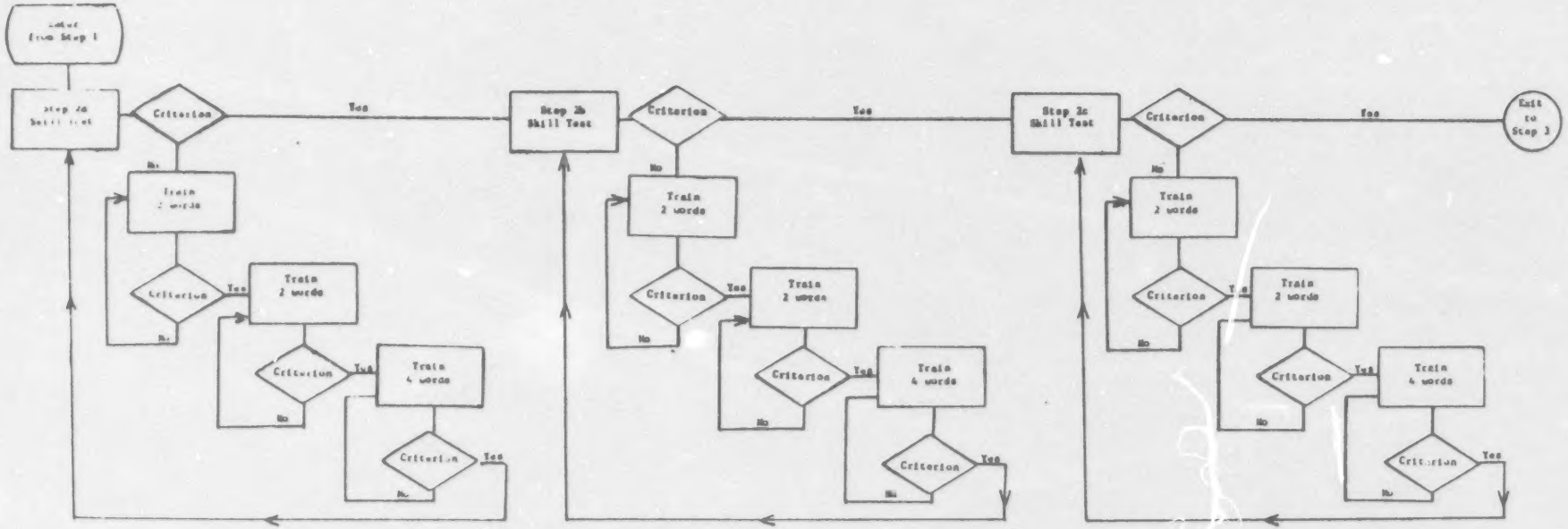


Figure 22: Order of Training for Step 2
of the Communication Board Program

and training, if necessary, with the trainer giving the instruction ("Show me," etc.) in speech and board simultaneously (Step 2a). The Step is then retested (and retaught if necessary) with the trainer using speech alone (trainer's board is not used) to give the instruction (Step 2b). Step 2c is then probed (and taught) with the trainer using only the board to give the instruction.

Criterion. Move the student through Step 2 (refer to Flow chart shown earlier) when criterion performance is met. As in Step 1, Step 2 criterion performance is 80% or more correct responses, or 12 consecutive responses, in one session. When a student responds at this level on a Skill Test, he/she may move on to the next Skill Test (2a, 2b, 2c, or 3a). When he/she responds at criterion during training, he/she may move on to either a new word group or a Skill Test.

SPECIFIC INSTRUCTIONS

STEP 2a: TRAINER USES SPEECH AND BOARD

Skill Test Instructions

As in Step 1, Step 2 has a Skill Test to be given before beginning training and after training each set of four items. Begin Step 3 after the student has reached criterion on Skill Tests a, b, and c.

Remember that this step teaches receptive object identification. The student should learn to understand the trainer's spoken and graphic (pointed) communication. As mentioned earlier, the student does not use his board during the Step 2 response. He also is not expected to vocalize as this is a receptive task.

When giving the Skill Test 2a, the 16 items are presented to the student in sets of four.

1. Place four items on the table in front of the student. Give one of the following instructions:

   A) Point to the symbol card for point while saying "POINT TO THE," then point to the symbol card for the object while saying the name of that object, OR

   B) Point to the symbol card for give while saying "GIVE," point to the symbol card for me while saying "ME," then point to the object's symbol card while saying the name of that object. If the student does not attend well to the trainer's board or seems confused by the addition of the pronoun me, the me can be omitted. The trainer would then say "GIVE" while pointing to the symbol for give, then say the object label while pointing to the symbol card for that object, OR

C) Point to the symbol card for the object while saying the name of that object.

2. After scoring the student's response, rearrange the four items on the table.

3. Select a new set of four items after the student has been given the instruction for each of the four items. Follow the same procedure for these items.

4. When all 16 items have been presented, rearrange the items to create new sets of four. Repeat the sequence, resulting in 32 trials. Use the Level A Training and Correction Procedure during the Skill Test. The following examples show how to use the procedure for the Step 2a Skill Test. The examples (trials 1, 2 and 4) are keyed to the sample Skill Test Scoring Form on Figure 23 and described in Table 12.

Scoring Responses for Skill Test

After the Skill Test has been given, count the number of correct (+), incorrect (-), shaped or prompted (S) and no-response (O) scores. Remember that speech responses are not recorded during Step 2. Refer to the 32 trial table in Appendix A to convert these numbers to percentages. Enter them in the appropriate boxes at the bottom of the Skill Test Form.

Training Instructions

1. Select two items and place them in front of the student. The trainer's board should be in full view of the student. Give one of the following instructions as with the Skill Test:

A) Point to the symbol card for point while saying "POINT TO THE." Then point to the object's symbol card while saying that object's name, OR

B) Point to the symbol card for give, saying "GIVE," point to the symbol for me while saying "ME" and then point to the object's symbol card while saying that object's name, OR

C) Point to the object's symbol card while saying the object's name. If this is chosen, gradually fade in a more complete instruction (choice 1 or 2) as training progresses.

For a correct response, the student must follow the instruction exactly. He/she must either point to the item (option A above) or give the item to the trainer (option B above). For the third option (C above), the student receives credit for picking up the item, pointing to it, or handing it to the trainer.

During each session, both items in the pair are presented randomly and for an equal number of trials. Follow the presentation order shown on the Step 2 data sheets (Type 1 or Type 2). Rearrange the items before every trial

Table 12

Example Trials* for Step 2a Skill Test
Communication Boards

Trainer board / SPEECH	Student (Pointing)
Trial 1	
(Place the trainer's board on the table close to but not in front of student. Place a brush, water, perfume, and paper on the table.)	
point brush / POINT TO BRUSH.	(Points to brush)
good brush / GOOD! THAT IS A BRUSH! (Gives brush to student momentarily, then asks for brush to be returned.) (Scores [+] on Skill Test Scoring Form and rearranges item on table for Trial 2.)	
Trial 2	
point water / POINT TO WATER.	(Points to brush)
wrong / WRONG. THIS IS WATER. (Points to actual object. Scores [-] on Skill Test Scoring Form.)	
point water / POINT TO WATER.	(Points to brush)
(Says nothing and rearranges items on table for Trial 3.)	
Trial 4	
point paper / POINT TO PAPER.	(no response)
wrong / WRONG. THIS PAPER. (Points to actual object. Scores [0] on Skill Test Scoring Form.)	
point paper / POINT TO PAPER	(no response)
(Says nothing and moves on to the next four items on Skill Test for Trials 5, 6, 7 & 8.)	

*Example trials for this Table correspond to those with asterisks (*) on the Example Skill Test Scoring Form, Figure 23.

Board
Signing

Figure 23
Skill Test Scoring Form for STEP 2

Student Ann Date 4/10/76 Session # 1

Trainer Steve

Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

List the 16 items (twice) that are used for training in STEP 2

	ITEM	SCORE		ITEM	SCORE
*1.	brush	+	1.	pencil	−
*2	water	−	2.	water	+
3	perfume	+	3.	shirt	−
*4	paper	0	4.	toothbrush	−
5.	pencil	−	5.	radio	−
6.	juice	+	6.	perfume	+
7.	toothbrush	−	7.	glasses	+
8.	shirt	+	8.	milk	−
9.	pants	−	9.	brush	0
10.	radio	−	10.	puzzle	−
11.	candy	0	11.	pants	+
12.	glasses	+	12.	coat	0
13.	milk	−	13.	paper	−
14.	puzzle	−	14.	cookie	+
15.	coat	+	15.	juice	−
16.	cookie		16.	candy	+

Score trials as correct (+); incorrect (-); shape (S); or no response (0).

Summary for Test (based on 32 trials)

	+	-	S	0
Score	12	16	0	4
Percent	38	50	0	12

* Example trials shown in Table 12.

so the student learns the object, not just the object's position. Train the two items until criterion is reached (80% correct, or 12 consecutive correct responses, during one session).

Example trials 1 through 4 on Table 13 show correct responses and use of the Training and Correction Procedure for a no-response and an incorrect response. These examples are keyed to the first four trials of the Type 1 and 2 Scoring Forms for Step 2 (Figures 24 and 25).

2. After criterion is met on the first pair of items, train a second pair to criterion.

3. Combine the two pair of items into a set of four and train to criterion following the same procedure. The Scoring Forms for Step 2 can be used for two or four items. Remember that now all four items are placed in front of the student during training.

4. Give the Skill Test again after criterion is reached on the set of four items.

5. If the student reaches criterion on the Skill Test, give Skill Test 2b (trainer uses speech alone, with no board).

6. If criterion was not met on the Skill Test, begin training the next pair (7 and 8), etc. The training sequence outline follows.

Train these items to criterion:

1 and 2 (e.g., cookie and ball)

3 and 4 (e.g., hat and book)

1, 2, 3 and 4 (e.g., cookie, ball, hat and book)

Give Skill Test. If criterion is reached, give Skill Test 2b (speech alone). If not, train items below.

5 and 6

7 and 8

5, 6, 7 and 8

Give Skill Test. If criterion is reached, give Skill Test 2b (speech alone). If not, train items below.

9 and 10

11 and 12

9, 10, 11 and 12

Give Skill Test. If criterion is reached, give Skill Test 2b (speech alone). If not, train items below.

Table 13

Example Trials* for Step 2a Training
Communication Board

Trainer board / SPEECH	Student (Pointing)
Trial 1 Trial 1	
point shirt / POINT TO SHIRT.	(no response)
wrong / WRONG. THIS IS SHIRT. (Points to actual object, then takes student's hand and moves it to the shoe; scores [0] on Scoring Form for Step 2.)	
point shirt / POINT TO SHIRT.	(Points to shirt)
good shirt / THAT'S GOOD! YOU POINTED TO SHIRT! (Gives piece of peanut to student.)	
(Rearranges items and goes to Trial 2.)	
Trial 2 Trial 2	
point shirt / POINT TO SHIRT.	(Points to shirt)
shirt / GREAT! YOU POINTED TO SHIRT! (Gives piece of peanut as reinforcer. Scores [+] on Scoring Form.)	
(Rearranges items and goes to Trial 3.)	
Trial 3 Trial 3	
point candy / POINT TO CANDY.	(Points to shirt)
wrong / WRONG. THIS IS CANDY. (Points to actual object. Scores [-] on Scoring Form.)	
point candy / POINT TO CANDY.	(Points to shirt)
(Says nothing, goes on to Trial 4.)	
Trial 4 Trial 4	
point candy / POINT TO CANDY.	(Points to candy)
good candy / GOOD! YOU POINTED TO CANDY! (Gives piece of candy to student as reinforcer. Scores [+] on Scoring Form.)	
(Rearranges items and goes to Trial 5.)	

*Example trials for this Table correspond to those with astericks (*) on the

Board Signing

Type 1

Figure 22
Scoring Form for Step 2

Student: Ann Date: 4/20/76 Session # 9

Trainer: Steve

Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

This scoring form can be used for either two - or four-item presentations described in Step 2 training procedures. For training pairs of items, assign number 1 and 3 to the first item and assign number 2 and 4 to the second item in the pair. When training all four items, assign each to a single number.

List items used: (1) shirt (2) candy (3) shirt (4) candy

• 1.	(1)	O	17.	(4)	O	33.	(1)	+	49.	(3)	−
• 2.	(3)	+	18.	(2)	−	34.	(4)	−	50.	(2)	+
• 3.	(4)	−	19.	(3)	−	35.	(2)	+	51.	(4)	+
• 4.	(4)	+	20.	(1)	+	36.	(4)	+	52.	(1)	+
5.	(1)	O	21.	(4)	+	37.	(3)	+	53.	(3)	+
6.	(1)	−	22.	(4)	+	38.	(4)	+	54.	(2)	−
7.	(2)	+	23.	(1)	+	39.	(3)	+	55.	(3)	+
8.	(3)	−	24.	(2)	+	40.	(1)	+	56.	(1)	+
9.	(4)	+	25.	(3)	+	41.	(3)	−	57.	(4)	+
10.	(2)	+	26.	(4)	−	42.	(2)	+	58.	(2)	+
11.	(1)	+	27.	(2)	+	43.	(2)	−	59.	(4)	+
12.	(4)	+	28.	(1)	+	44.	(1)	+	60.	(1)	+
13.	(3)	+	29.	(1)	−	45.	(2)	+	61.	(2)	+
14.	(2)	−	30.	(3)	−	46.	(1)	+	62.	(3)	−
15.	(4)	−	31.	(2)	+	47.	(3)	+	63.	(1)	+
16.	(3)	+	32.	(3)	+	48.	(4)	−	64.	(4)	+

Score trials as correct (+); incorrect (−); shape ($); or no response (0).

Percent Summary for Session

	+	−	$	0
2 items Score or 4 items Percent	44	17	0	3
	69	26	0	5

• Example trials shown in Table 13

Board Signing

Type 2

Figure 23
Scoring Form for Step 2

Student: Ann Trainer: Steve

Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items: 1) shirt 2) candy 3) shirt 4) candy

AI SIGN ME (LABEL) (points to objects)

NUMBER CORRECT	STIMULUS PRESENTATION	RESPONSE	DATE 4/8/76	4/11/76	4/12/76	4/14/76	4/17/76	4/19/76	4/21/76	4/22/76						
20	1	=	±	O	±	±	O	±	±							
19	3	=	±	O	O	±	=	±	=							
18	2	±	=	±	=	=	±	±	=							
17	4	±	O	=	O	O	±	=	O							
16	1	±	±	=	=	±	±	O	±							
15	1	O	=	±	O	±	±	±	=							
14	2	=	O	±	O	±	±	±	=							
13	3	O	O	±	±	=	=	=	±							
12	4	=	±	±	=	±	±	⊖	±							
11	2	±	−	⊖	±	⊖	⊖	±	⊕							
10		=	=	=	⊕	=	=	O	±							
9		=	⊖	O	±	±	O	±	±							
8		=	O	±	=	=	±	=	=							
7	2	±	±	±	O	±	=	±	±							
6	4	S	±	=	±	±	±	±	=							
5	3	O	±	±	±	O	±	±	O							
4	4	±	=	±	±	O	±	±	•±							
3	2	=	±	±	=	=	±	O	•=							
2	3	±	=	=	±	±	=	=	•±							
1	1	±	±	±	±	±	O	=	•O							
0			X	X	X	X	X	X	X	X	X	X	X	X	X	X

COMMENTS:

• Example trials shown in Table 13

13 and 14

15 and 16

13, 14, 15 and 16

Give Skill Test. If criterion is reached, give Skill Test 2b (speech alone). If not, rearrange the items into new pairs of two and sets of four. Continue training with the same procedure until the student does reach criterion on the Skill Test 2a.

STEP 2b: TEACHER USES SPEECH ALONE

Steb 2b is taught just like 2a except the trainer's board is not used (i.e., the trainer says the words but does not point to the symbol cards). This part of Step 2 is used to teach the student to match only the spoken referent to the object.

When criterion is reached on the Step 2b Skill Test, training should begin on Step 2c. Refer back to the Figure 22 Flow chart to see exactly how to proceed.

STEP 2c: TEACHER USES BOARD ALONE

Step 2c is exactly the same as Step 2b except that the instruction is given using only board symbols and no speech. Be careful that all other instructions, reinforcement, correction and conversation during the sessions be in either speech alone or speech and board together.

When criterion is reached on Skill Test 2c, proceed to Step 3.

Remember, if the student does not reach criterion after training all 16 items, you may regroup the training items and re-teach the Step.

SUMMARY FORM FOR STEP 2

Figure 26 shows a sample Summary Form for Step 2. It is filled out in the same way as the Summary Form for Step 1, with Skill Tests counting as training sessions. Criterion was reached in 18 sessions with 80% correct on the Skill Test 2a. Note that in sessions 11 and 16, criterion was met by the student giving 12 consecutive correct responses. The student is now ready for Skill Test 2b (trainer uses speech alone) and generalization training procedures on Step 2. Refer to Appendix B for instructions and examples for graphing progress.

PROGRAMMING FOR GENERALIZATION

When the student has met criterion on Step 2 the list of trained items

Board Signing

Figure 26

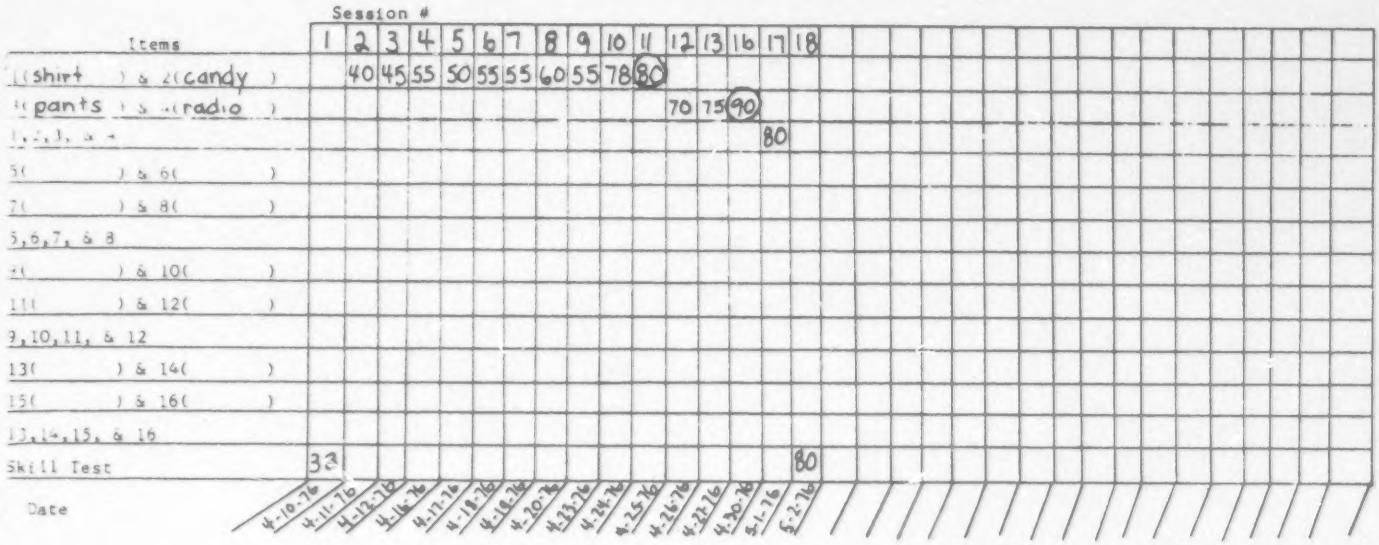
Summary Form for Step 2

Trainer's Stimulus: Speech and board

Student Ann C. Trainer Steve

Date Training Started April 10, 1976 Date Training Ended April 2, 1976 Total Sessions to Criterion 18

Percent Correct Responses Across Sessions



(Circled percentages represent criterion based on 12 consecutive correct responses.)

should be reviewed with the student's parents, parent-surrogates, teachers, etc. Specific suggestions for functional practice are found in Table 11.

It may be necessary initially to present the items in blocks of four (as in training) but as soon as possible the student should be asked to point to the object wherever it is located in his environment. For example, when sitting at the table the student could be asked to identify plate, spoon, fork, cup, milk, food, etc., or when in his room the student could be asked to identify various articles of clothing, etc. which are located in the closet such as: coat, shirt, pants, toys or games.

New items can be introduced when correct responding on previously trained items is maintained for several consecutive days. Again, and for all generalization training, a record of the student's progress should be kept on file for review.

STEP 3

("no card")

GENERAL INSTRUCTIONS

Training Goal

To teach the use of the symbol "no card" when asked to label items not symbolized on their board. This step is an extension of the reference concept. The student is taught how to indicate when he needs to label an object which is not symbolized on his board.

Training Items

Ten items or body parts whose labels are symbolized on the board, and 10 items or body parts whose labels are not symbolized on the board. As in preceeding steps it is important to select materials the student encounters every day.

Communication Board Display

One symbol is added to the student's board for this step. The suggested symbol is shown below (Note: the slash is made with a red colored marker) followed by the board display required.

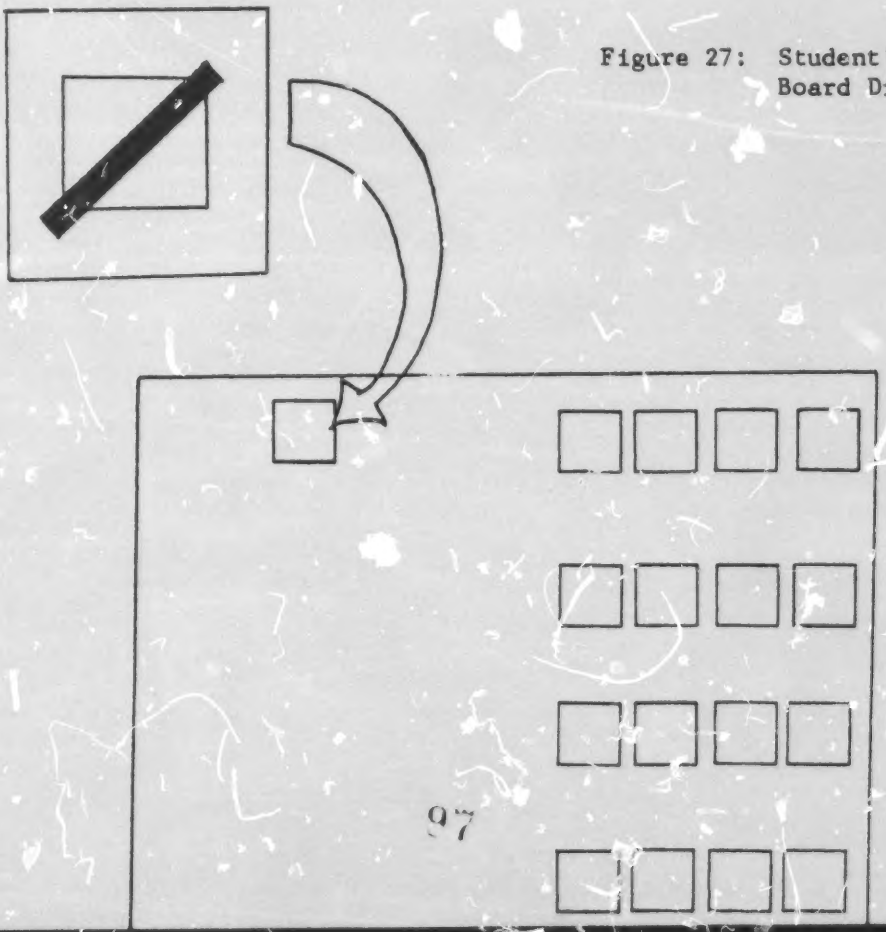


Figure 27: Student's Step 3 Board Display

Use of the Trainer's Board for Step 3

A diagram of a trainer's board is shown in Figure 28. The symbols used in training are shaded. They are identical to those used in Step 1.

Procedures

Training. Step 3 training procedures and training order are very similar to Step 1. Use the Total Communication Training Procedures appropriate for your student. Figure 29 presents a flow chart indicating the order of training to proceed through this Step.

Criterion. Move the student through Step 3 (refer to flow chart shown earlier) when criterion performance is met. As in Steps 1 and 3, Step 3 criterion performance is 80% or more correct responses, or 12 consecutive responses, in one session. When a student responds at this level on a Skill Test, he/she may move on to the next Skill Test (3a, 3b, 3c or 4a). When he/she responds at criterion during training, he/she may move on to either a new word group or a Skill Test.

SPECIFIC INSTRUCTIONS

STEP 3a: TRAINER USES SPEECH AND BOARD

Skill Test Instructions:

This Step has a Skill Test to be given to the student before beginning training and after training on each set of four items. The student's board display remains constant throughout the Step.

In giving the Skill Test, present all 20 items to the student, one at a time. Only the item presented should be in view. The remaining items should be placed nearby in a box. Each item is presented twice making a total of 40 trials, but no item is presented twice in a row. In presenting the items, the trainer holds each one in front of the student (or points to it) and asks, WHAT'S THAT? using speech plus the trainer's board. (If using body parts, the trainer points to his or her own body part).

NOTE: The trainer uses the "Training and Correction Procedure" when giving the Skill Test.

The example trials in Table 14 are provided to show how this is done. The example trials are keyed to Trials 1, 2, 3, 4, and 6 on the sample Skill Test Scoring Form for Step 3 (Figure 30). Note that the student is trained using the Total Communication Level A.

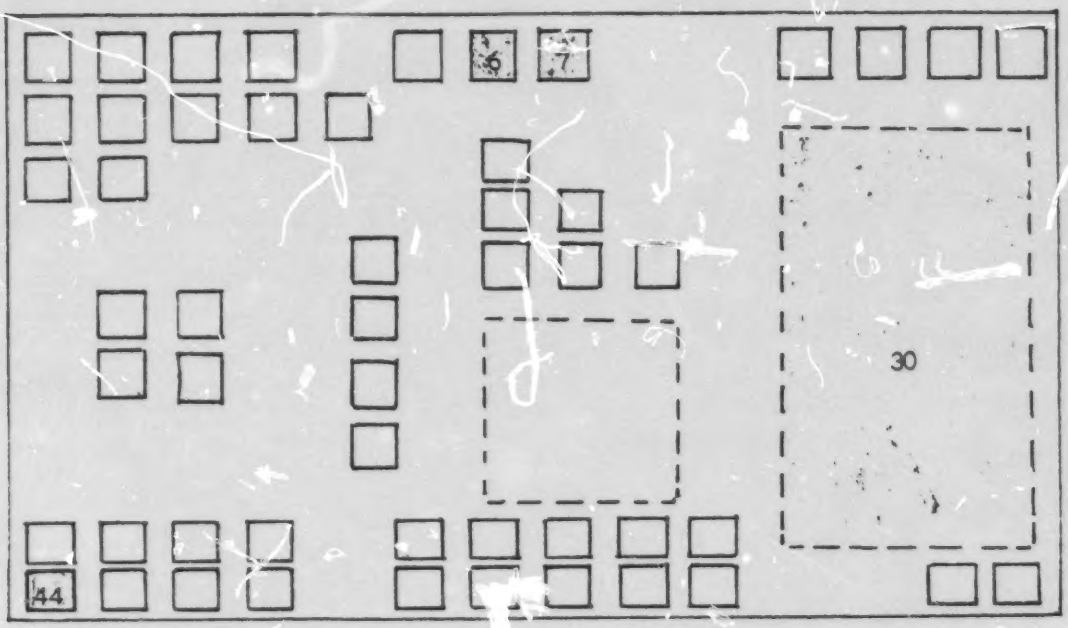
Training Instructions

1. Place the student's (and trainer's) boards by the student.

2. Select 2 of the symbolized items and 2 of the nonsymbolized items used in the Skill Test and place them all in front of the student.

Figure 28

Trainer's Board for Step 3*



6. good
7. wrong
30. nouns
44. what

* See Figure 4 for full discription of the Trainer's Symbols.

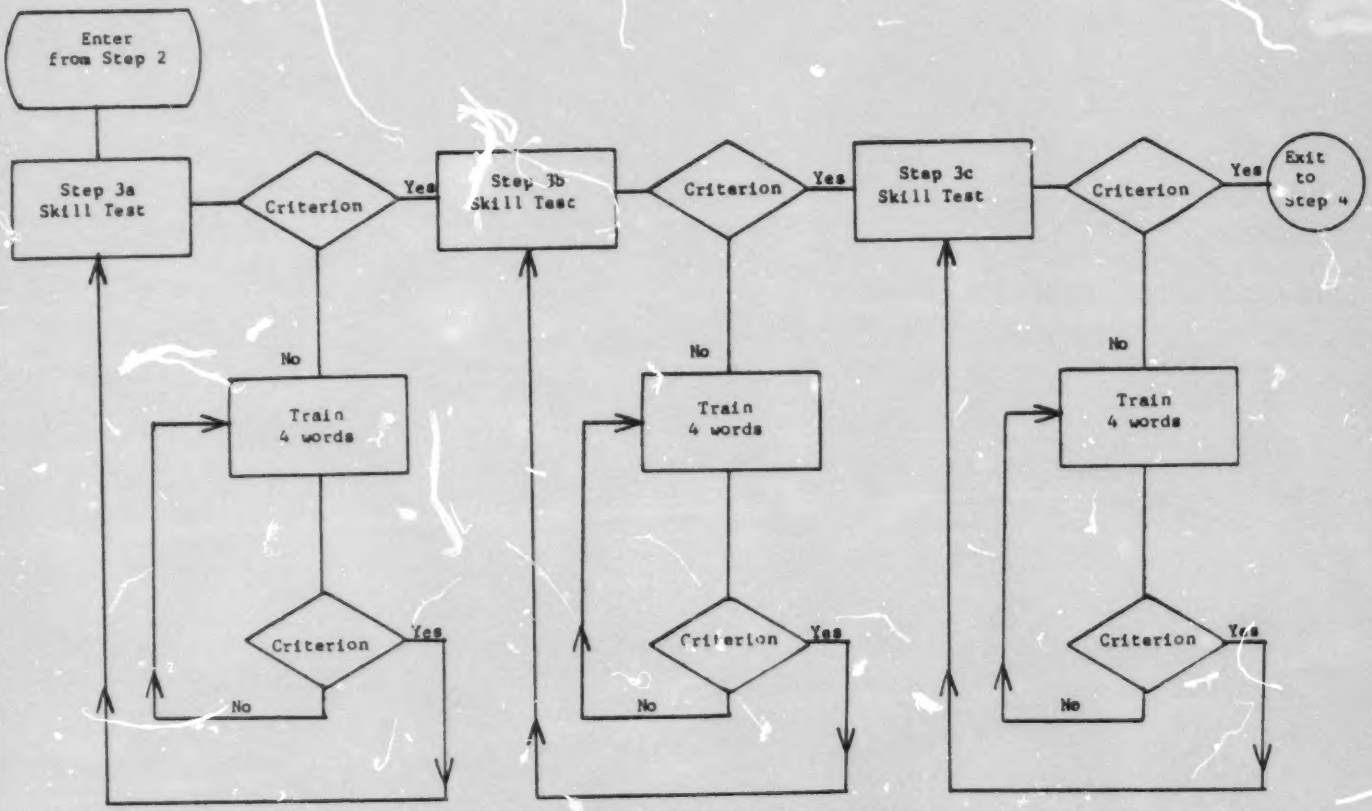


Figure 29: Order of Training for Step 3 of the Communication Board Program

Table 14

Example Trials* for Step 3a Skill Test
Level A Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Trial 1	
(Holds up ball.) what (points to ball) / WHAT'S THAT?	ball / (no response)
SUPER! YOU GOT IT RIGHT. (Lets student play with ball. Scores [+八] on Skill Test Scoring Form for Step 3.)	
Trial 2	
(Holds up nut.) what (points to nut) / WHAT'S THAT?	cookie / (no response)
wrong / WRONG. IT'S NOT A COOKIE. NO CARD (Points to the student's no card symbol.) YOU DON'T HAVE A SYMBOL FOR NUT. (Scores [-八] on Skill Test Scoring Form.)	
HANDS READY	(Places hands in lap.)
what (points to nut) / WHAT'S THAT?	no card / (no response)
THAT'S RIGHT! YOU DON'T HAVE A SYMBOL FOR NUT.	
(Since the student does not have a symbol for "nut" he should point to no card when asked "WHAT'S THAT?")	
Trial 3	
(Holds up chip.) what (points to chip) / WHAT'S THAT? (Points to the student's no card symbol.)	no card / (no response)
good / GOOD JOB! YOU DON'T HAVE A SYMBOL FOR "CHIP" (Scores [S八] on Skill Test Scoring Form.)	
(Here the trainer used an imitative prompt to elicit the new response. The prompt will only be continued if the student continues to respond incorrectly.)	
Trial 4	
(Holds up car.) what (points to car) / WHAT'S THAT?	no card / (no response)
wrong / WRONG IT'S A "CAR". (Points to the student's car symbol. Scores [-八] on Skill Test Scoring Form.)	
hands ready / LET'S TRY AGAIN. HANDS READY	(Student places hands on table beside board.)
what (points to car) / WHAT'S THAT?	car / (no response)
MUCH BETTER!	
(The student does have a symbol for car on his board. He should point to the car symbol when asked "WHAT'S THAT?")	
Trial 6	
(Holds up paint.) what (points to paint) / WHAT'S THAT?	no card / (no response)
WOW! THAT'S RIGHT. YOU DON'T HAVE A SYMBOL FOR PAINT. (Scores [-八] on Skill Test Scoring Form.)	

*Example trials for this Table correspond to those with asterisks (*) on the Example Skill Test Scoring Form for Step 3, Figure 39.

Board

Figure 30
Skill Test Scoring Form for Step 3

Student Ralph Date 6/23/76 Session # 1
Trainer Julie

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Present this item WHAT'S THAT	Expected Response	Score	Present this item WHAT'S THAT	Expected Response	Score
*1. ball	"(label)"	±/	21. cookie	"(label)"	±/
*2. suit	"no-card"	-/	22. paint	"no-card"	-/
*3. chips	"no-card"	-/	23. harmonica	"no-card"	±/
*4. car	"(label)"	-/	24. drum	"no-card"	±/
5. radio	"(label)"	±/	25. crayon	"(label)"	±/
*6. paint	"no-card"	±/	26. glue	"no-card"	-/
7. hat	"(label)"	-/	27. gum	"no-card"	±/
8. drum	"no-card"	-/	28. bubbles	"(label)"	±/
9. glue	"no-card"	-/	29. spoon	"(label)"	±/
10. harmonica	"no-card"	-/	30. book	"(label)"	±/
11. pop	"(label)"	-/	31. clock	"no-card"	-/
12. gum	"no-card"	±/	32. pop	"(label)"	±/
13. book	"(label)"	-/	33. record	"no-card"	-/
14. clock	"no-card"	-/	34. hat	"(label)"	-/
15. spoon	"(label)"	±/	35. ice cream	"no-card"	±/
16. bubbles	"(label)"	±/	36. radio	"(label)"	±/
17. crayon	"(label)"	±/	37. car	"(label)"	±/
18. record	"no-card"	-/	38. chips	"no-card"	-/
19. ice cream	"no-card"	±/	39. ball	"(label)"	±/
20. cookie	"(label)"	±/	40. suit	"no-card"	±/

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech 0	Speech +	Speech -	Speech S	Speech 0
Score	23	11	6	0				
Percent	58	28	15	0				

* Example trials shown in Table 14

3. Ask WHAT'S THAT? using speech and the trainer's board. If the item shown is symbolized, the student must point to the correct object symbol to be given credit for a correct response. As with other Steps, the student must use the speech to accompany the pointing for whatever Level is currently being used. The intelligibility scores are credited by judging the interaction of the speech and pointing. Present the items in the order shown on the Scoring Form for Step 3.

   The example trials below Table 15 illustrate what to do for trials in which a correct response is not given. These examples correspond to the Scoring Forms for Step 3, Figures 31 and 32.

4. Continue training on the first four items until the student achieves criterion performance (80% intelligible responses or 12 intelligible in succession).

5. After the set of four items is trained to criterion, give the Skill Test again. If the student achieves criterion on the Skill Test administer the Step 3b Skill Test.

Train to criterion, the following items:

2 symbolized from Step 1, 2 nonsymbolized

Administer Skill Test (if criterion is reached, proceed to Step 4, if a trainer's board is used, follow the training order described in Appendix B; if criterion is not reached, train items below);

2 other symbolized from Step 1, 2 new nonsymbolized

Administer Skill Test (if criterion is reached, proceed to Step 4, if a trainer's board is used, follow the training order described in Appendix B; if criterion is not reached, train items below);

2 other symbolized from Step 1, 2 new nonsymbolized

Administer Skill Test (if criterion is reached, proceed to Step 4, if a trainer's board is used, follow the training order described in Appendix B; if criterion is not reached, train items below;

2 other symbolized from Step 1, 2 new nonsymbolized

Administer Skill Test (if criterion is reached, proceed to Step 4, if a trainer's board is used, follow the training order described in Appendix B; if criterion is not reached, train items below;

2 other symbolized from Step 1, 2 new nonsymbolized

Administer Skill Test (if criterion is reached, proceed to Step 4, if a trainer's board is used, follow the training order described in Appendix B; if criterion is not reached, see note below).

Table 15

Example Trials* for Step 3a Training
Level A Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Type 1 Trial 2 Type 2 Trial 3	
(Holds up a chip.) what (points to chip) / WHAT'S THAT?	(no response) / (no response)
NO CARD, RALPH (Points to no card on student's board.) YOU DON'T HAVE A SYMBOL FOR "CHIP". (Scores [0人] on Scoring Form.)	
what (points to chip) / WHAT'S THAT? (Says nothing. Goes to next trial.)	(no response) / (no response)
Type 1 Trial 3 Type 2 Trial 6	
(Holds up cookie.) what (points to cookie) / WHAT'S THAT?	cookie / (no response)
SUPER JOB! IT IS A COOKIE. (Gives student a piece of cookie. Scores [+人] on Scoring Form.)	
Type 1 Trial 8 Type 2 Trial 7	
(Holds up paint.) what (points to paint) / WHAT'S THAT?	no card / (no response)
WAY TO GO! YOU GOT IT RIGHT. (Scores [+人] on Scoring Form.)	

*Example trials for this Table correspond to those with asterisks (*) on the Example Step 3 Scoring Forms, Figures 31 and 32.

Board

Figure 31
Scoring Form for Step 3

Type 1

Student Ralph Date 6/25/76 Session # 2

Trainer Julie

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

List items used:
Symbolized 1) ball 2) cookie Nonsymbolized 3) paint 4) chip

	Present this item WHAT'S THAT	Expected Response	Score		Present this item WHAT'S THAT	Expected Response	Score
1.	(1)	"(label)"	-/+	19.	(3)	"no card"	+/-
*2.	(4)	"no card"	0/+	20.	(1)	"(label)"	+/-
*3.	(2)	"(label)"	+/-	21.	(4)	"no card"	-/+
4.	(4)	"no card"	-/+	22.	(4)	"no card"	+/-
5.	(1)	"(label)"	-/+	23.	(1)	"(label)"	+/-
6.	(1)	"(label)"	0/+	24.	(2)	"(label)"	+/-
7.	(2)	"(label)"	0/+	25.	(3)	"no card"	-/+
*8.	(3)	"no card"	+/-	26.	(2)	"(label)"	+/-
9.	(4)	"no card"	0/+	27.	(2)	"(label)"	+/-
10.	(1)	"(label)"	-/+	28.	(1)	"(label)"	+/-
11.	(3)	"no card"	+/-	29.	(1)	"(label)"	+/-
12.	(4)	"no card"	0/+	30.	(3)	"no card"	-/+
13.	(3)	"no card"	0/+	31.	(2)	"(label)"	+/-
14.	(2)	"(label)"	+/-	32.	(3)	"no card"	-/+
15.	(4)	"no card"	-/+	33.	(1)	"(label)"	+/-
16.	(3)	"no card"	-/+	34.	(4)	"no card"	+/-
17.	(4)	"no card"	+/-	35.	(3)	"no card"	+/-
18.	(2)	"(label)"	+/-	36.	(2)	"(label)"	+/-

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech +	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech 0	Speech +	Speech -	Speech S	Speech 0
Score	21		9	2	4				
Percent	58		25	6	11				

* Example trials shown on Table 13

Board

Figure 32
Scoring Form for Step 3

Type 1

Student Ralph Trainer Julie

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Symbolized Items 1) ball 2) cookie Nonsymbolized Items 3) paint 4) chip

A: "WHAT'S THAT?" L: "(label)" NC: "no card"

20	1-L	+/-	+/-	-	-	-	+/-	-	-	-	-	-	+/-
19	3-NC	+/-	+/-	-	-	-	+/-	-	-	-	-	-	+/-
18	4-NC	-/+	+/-	-	-	-	+/-	-	-	-	-	-	+/-
17	2-L	+/-	+/-	-	-	-	+/-	-	-	-	-	-	+/-
16	1-L	+/-	+/-	-	-	-	+/-	-	-	-	-	-	+/-
15	4-NC	+/-	+/-	-	-	-	+/-	-	-	-	-	-	+/-
14	2-L	+/-	+/-	-	-	-	+/-	-	-	-	-	-	+/-
13	3-NC	+/-	+/-	-	-	-	+/-	-	-	-	-	-	+/-
12	3-NC	0/+	S/+	-	-	-	+/-	-	-	-	-	-	+/-
11	4-NC	-/+	0/+	-	-	-	+/-	-	-	-	-	-	+/-
10	1-L	-/+	0/+	-	-	-	+/-	-	-	-	-	-	+/-
9	4-NC	-/+	+/-	-	-	-	+/-	-	-	-	-	-	+/-
8	2-L	+/-	+/-	-	-	-	+/-	-	-	-	-	-	+/-
7	3-NC	0/+	+/-	-	-	-	+/-	-	-	-	-	-	+/-
6	2-L	+/-	+/-	-	-	-	+/-	-	-	-	-	-	+/-
5	2-L	-/+	0/+	-	-	-	+/-	-	-	-	-	-	+/-
4	1-L	-/+	-/+	-	-	-	+/-	-	-	-	-	-	+/-
3	4-NC	-/+	0/+	-	-	-	+/-	-	-	-	-	-	+/-
2	3-NC	-/+	-/+	-	-	-	+/-	-	-	-	-	-	+/-
1	1-L	+/-	-/+	-	-	-	+/-	-	-	-	-	-	+/-
0		6/24/76	6/25/76										

STIMULUS PRESENTATION NUMBER CORRECT

COMMENTS:

6/24/76 – nurse reported a change in medication

* Example trials on Table 13

Note: If the student fails to reach criterion on the Skill Test following training on the last four items, you have two options. You may rearrange the 20 items to create new sets of four items and train the new sets until the student reaches criterion on the Skill Test, or you may select a completely different set of 20 items to be used on the Skill Test and train the new items.

STEPS 3b and 3c

SPEECH ALONE AND BOARD ALONE

Steps 3b and 3c are taught as described for these conditions in Steps 1 and 2. Use the training sequence from Step 3a. Refer back to Figure 29 to see exactly how to proceed.

SUMMARY FORM FOR STEP 3

Figure 33 presents a sample summary form for the Step 3 program. As the Summary Form shows, the student reached criterion performance on the Skill Test in the 14th session.

PROGRAMMING FOR GENERALIZATION

A list of the newly trained nonsymbolized items should be given to the student's parents, parent-surrogates, teachers, etc. once the student has completed Step 3. Whenever it is appropriate these persons should present the same items to the student and ask "What's that?" Different nonsymbolized items should gradually be added. Table 11 gives examples of various cues to be used and functional settings where the new skill may be practiced.

When a nonsymbolized object is presented and the student points to "no card" on his/her board that response should be reinforced and then the label should be provided. For example: the nonsymbolized object, towel, is presented with the stimulus "What's that?"; the student points to "no card" on his/her board. The parent, etc., would reinforce that response by saying something like "Right, you don't have that symbol on your board. It's a towel."

Board

Figure 33
Summary Form for Step 3

Speech Level: A Trainer's Stimulus: Speechand board

Student Ralph Trainer Julie

Date Training Started 6/23/76 Date Training Ended 7/22/76 Total Sessions to Criterion 14

Percent Correct Responses Across Sessions

"(label)"/"no card" Session #

Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Speech Approximations
1,2,3,4		58	58	69	83										
5,6,7,8							72	64	69						
9,10,11,12										47	53	69	97		
13,14,15,16															
17,18,19,20															
Skill Test	58					68								94	
Date	6-23-76	6-25-76	7-2-76	7-3-76	7-4-76	7-7-76	7-9-76	7-11-76	7-14-76	7-15-76	7-16-76	7-17-76	7-18-76	7-22-76	

Items used in training

Symbolized
1. ball
2. cookie
5. radio
6. hat
9. pop
10. book
13. spoon
14. bubbles
17. crayon
18. car

Nonsymbolized
3. paint
4. chips
7. nut
8. drum
11. glue
12. harmonica
15. gum
16. clock
19. record
20. ice cream

(Circled percentages represent criterion based on 12 consecutive correct responses.)

STEP 4

(Requesting Symbolized Items)

GENERAL INSTRUCTIONS

Training Goal

To train the student to request items symbolized on the board using a two-word response ("want item"). This Step initiates training in the control dimension of language (i.e., saying things which direct another person to do something).

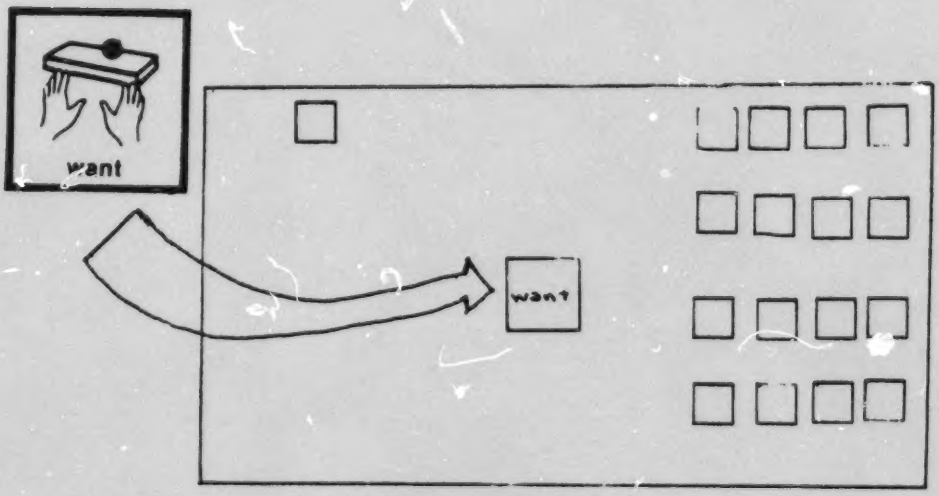
Training Items

Ten items (foods, liquids, toys, etc.) that are reinforcing to the student. The most important thing in making your selection of items for this Step is that the student wants them. It is also important for the student to be able to label the items on their board. Thus, items from Step 1 should be used if they are important to the student. If new items are used, you should make sure that the student has and can use the symbols for those new items.

Communication Board Display

The symbol representing "want" is added to the student's board for this Step. The symbol is displayed as shown below. The example uses a Peabody rebus.

Figure 34: Student's Step 4 Board Display



Use of the Trainer's Board for Step 4

Figure 35 shows what symbols on the trainer's board are used during training for Step 4.

Procedures

Use the Total Communication Training and Correction Procedure Level A or B depending on your student's speech skills. If using Level B, remember that many students must receive considerable stimulation before vocalizing a two-syllable utterance. Reread Level B procedures if you have any questions about how to apply reinforcement contingent on a spoken plus pointed response.

Criterion remains the same as in previous Steps.

See Figure 36 for a flow chart for the order of training for Step 4. Step 4 is taught only with the trainer using speech and board together.

SPECIFIC TRAINING INSTRUCTIONS

STEP 4: TRAINER USES SPEECH AND BOARD

1. Hold up each item one at a time, and ask, WHAT WANT? using speech plus the trainer's board. A correct response must include the symbol "want" plus the correct symbol for the item (e.g., "want car"). The student is given the item for correct responses. For example, if you hold up a cookie and ask WHAT WANT? and the student responds, "want cookie," you then give the student the cookie (or a portion of it). If the item is non-consumable, let the student play with it before asking that it be given back for use in further trials. When you ask for the item back, extend your hand and say I WANT (ITEM).

   Partial responses by the student are of particular importance in this Step. If partial responses are given (e.g., labeling the item without first saying "want"), you should emphasize the missing component when modeling the correct response (e.g., WANT 'ITEM'). Some examples of typical trials, using the Training and Correction Procedure Level B are presented in Table 16.

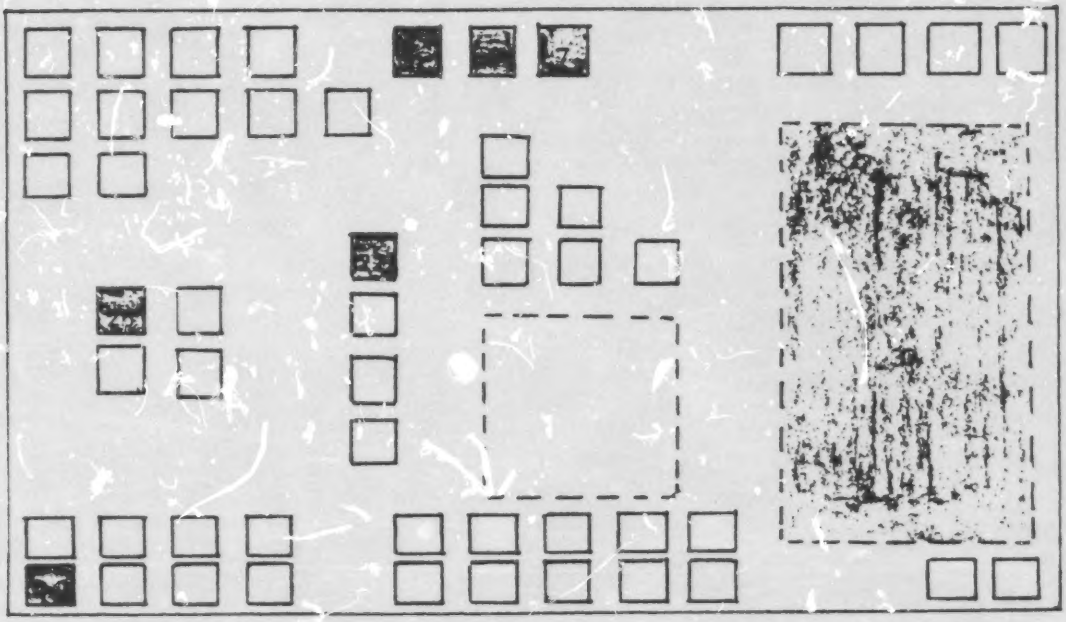
   These examples are scored to three of the trials shown in both the Sample Scoring Forms for Step 4, Figures 37 and 38.

2. Present the ten items three times each in a session (for a total of 30 trials), as indicated if using the Type 1 Scoring Form for Step 4. Present the 10 items twice each in a session (for a total 20 trials), if using the Type 2 Scoring form for Step 4.

3. If using Type 1 Forms, count the number of correct (+), incorrect (-), shaped (S), and no-response (0) for speech and nonspeech. Refer to

Figure 35

Trainer's Board for Step 4*



5 correct
6 good
7 wrong
22 want
26 I
30 (noun labels)
44 what

* See Figure 4 for full discription of the Trainer's Symbols.

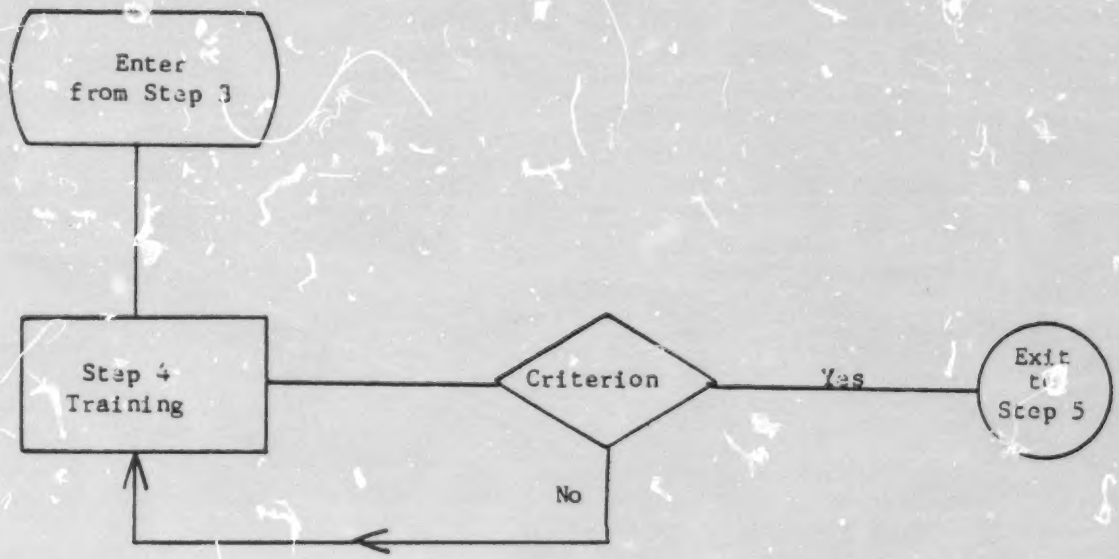


Figure 36: Order of Training for Step 4 of the Communication Board Program

Table 16

Example Trials* for Step 4a Training
Level B Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Type 1 Trial 1 Type 2 Trial 3	
(Shows brush to student.) what want / WHAT WANT?	brush / (no response)
SAY "WANT BRUSH" (Points to want and then brush on student's board. Scores [-/\0] on Step 4 Scoring Form.)	
(Shows brush to student.) what want / WHAT WANT?	want brush / UH BUH
GREAT! YOU CAN HAVE THE BRUSH. (Gives brush to student.)	(brushes hair)
Type 1 Trial 5 Type 2 Trial 10	
(Shows cookie to student.) what want / WHAT WANT? (Prompts the response by pointing to want cookie on student's board.)	want cookie / UH UH-UH
OKAY. YOU CAN HAVE THE COOKIE. (Gives a piece of cookie to student. Scores [S/\S] on Scoring Form.)	
(Since the trainer prompted the student to point to want cookie, the response is recorded as [S/\S] on the Scoring Form.	
Type 1 Trial 9 Type 2 Trial 12	
(Shows student milk.) what want / WHAT WANT?	want milk / UH MUH
good / GOOD FOR YOU! YOU SAID WANT MILK! (Gives student some milk. Scores [+/\S] on Scoring Form.)	

*Example trials for this Table correspond to those with astericks (*) on the Example Step 5 Scoring Forms, Figures 37 and 38.

Board

Figure 37
Scoring Form for Step 4

Type 1

Student Anna Date 8-5-76 Session # 1

Trainer Steve

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

List Symbolized Items Used:

(1) bruch (2) water (3) perfume (4) juice (5) cookie
(6) candy (7) sadie (8) puggle (9) milk (10) pencil

Present this item: Ask, WHAT WANT?	Expected Response: "want" (label) (Score)	Present this item: Ask, WHAT WANT?	Expected Response "want (label)" (Score)	Present this item: Ask, WHAT WANT?	Expected Response "want (label)" (Score)
1. (1)	*-/0	11. (1)	-/0	21. (1)	+/3
2. (2)	0/0	12. (2)	0/0	22. (2)	+/0
3. (3)	0/3	13. (3)	S/3	23. (3)	+/3
4. (4)	S/S	14. (4)	S/3	24. (4)	+/3
5. (5)	*S/3	15. (5)	-/S	25. (5)	-/3
6. (6)	-/3	16. (6)	+/3	26. (6)	+/3
7. (7)	-/3	17. (7)	+/3	27. (7)	+/3
8. (8)	S/3	18. (8)	-/3	28. (8)	-/3
9. (9)	*+/3	19. (9)	+/0	29. (9)	+/3
10. (10)	0/0	20 (10)	+/3	30. (10)	+/3

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech 0	Speech +	Speech -	Speech S	Speech 0
Score	13	0	8	5	4		0	23	7
Percent	43		27	17	13			77	23

*Example trials on Table 16

Board

Figure 38
Scoring Form for Step 4

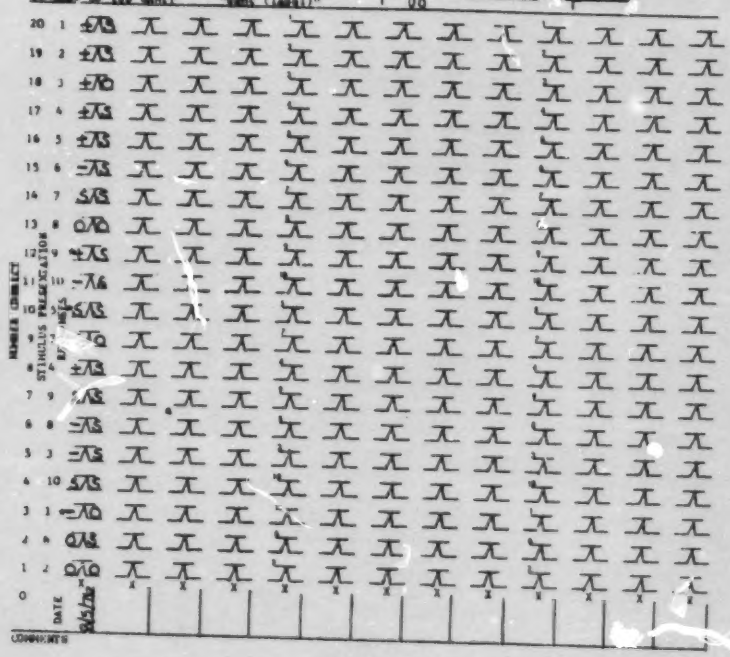
Type 2

Student Anna Trainer Steve

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items Symbolized: 1) bruch 2) water 3) perfume 4) juice 5) cookie
6) candy 7) sadie 8) puggle 9) milk 10) pencil

A) WHAT DO YOU WANT? "WANT (label)"



*Example trials on Table 16

30-trial table in Appendix A for converting these numbers to percents, and enter percents on the bottom of the Scoring Form. If using Type 2 Forms count the number of correct (+) speech and nonspeech scores and circle these three totals on that session's data column.

4. Record percent correct and acceptable nonspeech responses for each session on Summary Form for Step 4. (See sample Summary Form for Step 4, Figure 39.) Continue training until criterion performance is reached (80 percent acceptable in one session or 12 in-a-row acceptable in one session).

5. Advance the student to Step 5 when criterion performance is reached and initiate generalization training for Step 4.

Note: Use only items that the student really wants for this Step, and make sure to give the item to the student for correct responses. Training on this Step will be difficult and non-functional if these two considerations are not met.

PROGRAMMING FOR GENERALIZATION

When the student has reached criterion performance on Step 4, parents, parent-surrogates, teachers, etc. should periodically present the trained items to the student and ask "What want?" The item and verbal praise are given for a correct response.

Gradually "What want?" should be varied with the addition of related questions which are longer and use other vocabulary. For example: "What do you want?", "What would you like?", "What want eat?", "What want play with?", and "What do you want to drink?" These and any other related questions should be asked when and where it is appropriate to ask them. Refer to Table 11 for examples of functional and naturally occurring combinations of persons, places and objects.

Parents, etc. should be especially sensitive to spontaneous requests by the student that include the newly trained response. Such spontaneous (or self-initiated) requests should be heavily reinforced.

Board

Figure 39

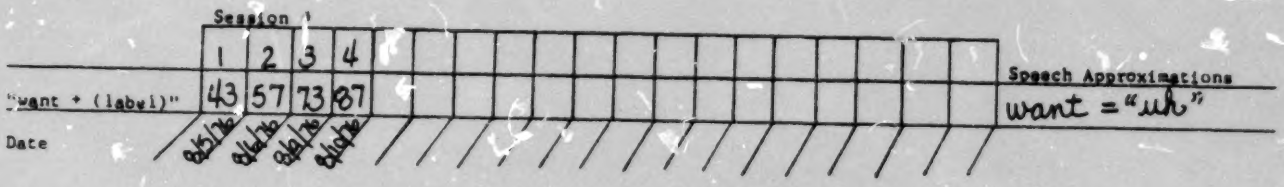
Summary Form for Step 4

Speech Level: B Trainer's Stimulus: speech and board

Student Ann Trainer Steve

Date Training Started 3/5/76 Date Training Ended 3/10/76 Total Sessions to Criterion 4

Percent Correct Responses Across Sessions



(Circled percentages represent criterion based on 12 consecutive correct responses.)

STEP 5

(Requesting Nonsymbolized Items)

GENERAL INSTRUCTIONS

Training Goal

To train the student to request items not symbolized on the board using a two-part response ("want" object). This Step continues training in the control dimension of language.

Training Items

Ten items that are reinforcing to the student, but which are not symbolized on the board.

Board Display for Student and Trainer

No new symbols are added to the board display for this Step.

Procedures

Use the Training and Correction Procedure as with Step 4. See Figure 40 for a flow chart for Step 5 training.

SPECIFIC TRAINING INSTRUCTIONS

STEP 5: TRAINER USES SPEECH AND BOARD

1. Hold up each item, one at a time, and ask, WHAT WANT? by pointing to both symbols on the trainer's board as the words are said. A correct response must include the symbol "want" plus the student pointing to the desired object (not the "no card" symbol). The student is given the item for correct responses. For example, if you hold up a cookie (which is not symbolized on the student's board) and ask WHAT WANT? and the student responds "want" and points to cookie, give the student the cookie (or a portion of it). If the item is non-consumable, let the student play with it before asking that it be given back for use in further trials. When you ask for the item back, extend your hand and say "I WANT (ITEM)." Examples of training trials using Speech Level A are presented in Table 17. These examples are keyed to trials in Figures 41 and 42 (Session 1).

2. Present the ten items three times each in a session (for a total of 30 trials if using Type 1 Scoring Forms). Present the items twice if using Type 2 Scoring Forms.

3. If using Type 1 Forms, count the number of correct (+), incorrect (-), shaped (S), and no-response (0) for speech and nonspeech scores. Convert

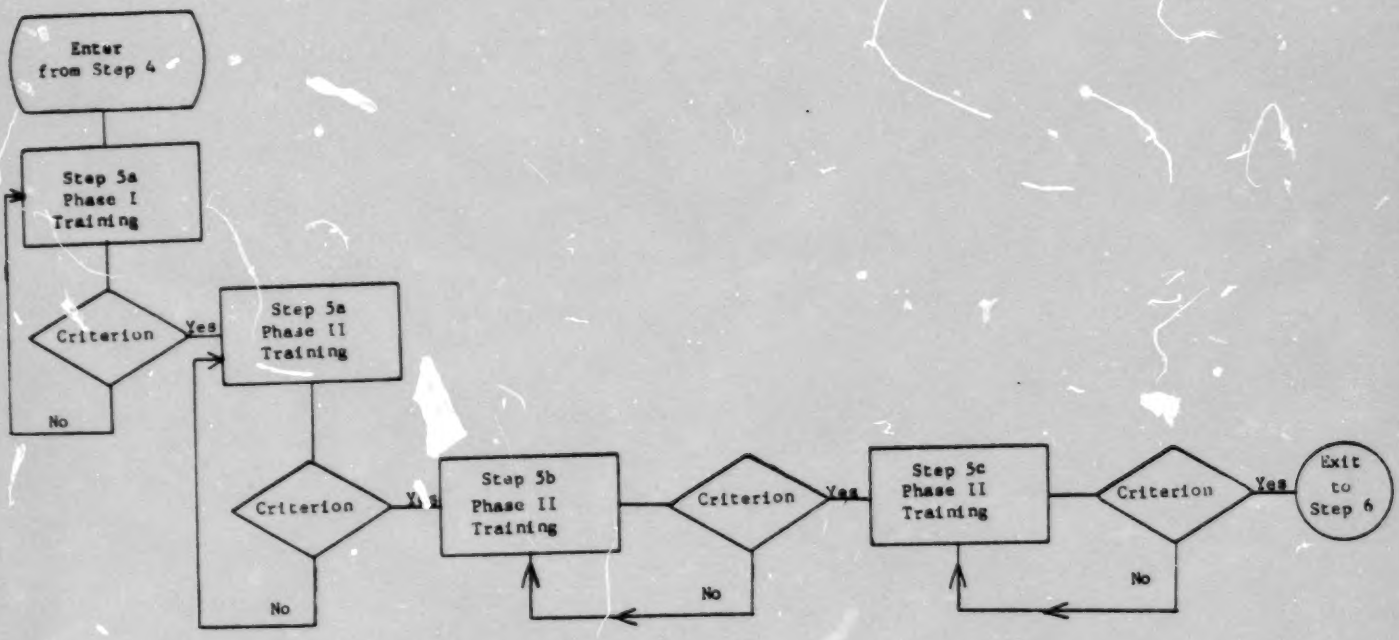


Figure 40: Order of Training for Step 5 of the Communication Board Program

Table 17

Example Trials* for Step 5a Training
Level A Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Type 1 Trial 1 Type 2 Trial 3	
(Shows student nut.) what want / WHAT WANT?	want no card / (no response)
wrong / WRONG. TELL ME WANT NUT. (Points to want on the student's board and then to the nut. Scores [-人] on Step 5 Scoring Form.)	
what want / WHAT WANT?	(points to nut)
(Says nothing. Goes to the next trial.)	
(It is incorrect for the student to say, want no card. This does not tell the trainer what nonsymbolized object the student wants. The student should point to want and then to the actual object.)	
Type 1 Trial 5 Type 2 Trial 10	
(Shows student the glue.)	
what want / WHAT WANT? (Prompts response by pointing to want on the student's board and then to the glue.)	want (points to glue) / (no response)
GREAT! YOU CAN HAVE THE GLUE. (Gives student the glue and someppaper to glue together. Scores [S人] on the Step 5 Scoring Form.)	(Pushes glue away and shakes head.)
(The student did not want the glue. It would be a good idea to replace the glue with another more reinforcing item; one that the student really does want.)	
Type 1 Trial 10 Type 2 Trial 11	
(Shows ice cream to student.) what want / WHAT WANT?	want (points to ice cream) / (no response
ALRIGHT! HERE YOU GO. (Gives student a bite of ice cream. Scores [+人] on Scoring Form.)	

*Example trials for this Table correspond to those with astericks (*) on the Example Step 5 Scoring Forms, Figures 41 and 42.

Board

Figure 41
Scoring Form for Step 5

Type 1

Student Ralph Date Sept 3, 1976 Session # 1

Trainer Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

List Nonsymbolized Items Used: 1) nut 2) chip 3) paint 4) drum 5) glue
6) Sacramento 7) gum 8) clock 9) record 10) ice cream

Present this item Ask, WHAT WANT?	Expected Response: "want" object (Score)	Present this item Ask, WHAT WANT?	Expected Response: "want" object (Score)	Present this item Ask, WHAT WANT?	Expected Response: "want" object (Score)
1. (1)	*=/	11. (1)	+/	21. (1)	+/
2. (2)	=/	12. (2)	+/	22. (2)	+/
3. (3)	0/	13. (3)	+/	23. (3)	+/
4. (4)	0/	14. (4)	=/	24. (4)	+/
5. (5)	*S/	15. (5)	0/	25. (5)	=/
6. (6)	S/	16. (6)	+/	26. (6)	+/
7. (7)	S/	17. (7)	+/	27. (7)	+/
8. (8)	=/	18. (8)	+/	28. (8)	=/
9. (9)	S/	19. (9)	+/	29. (9)	=/
10. (10)	*+/	20. (10)	0/	30. (10)	+/

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech +	-	S	0	Speech +	-	S	0
Score	15		7	4	4			
Percent	50		23	13	13			

*Example trials on Table 17

Board

Figure 42
Scoring Form for Step 5

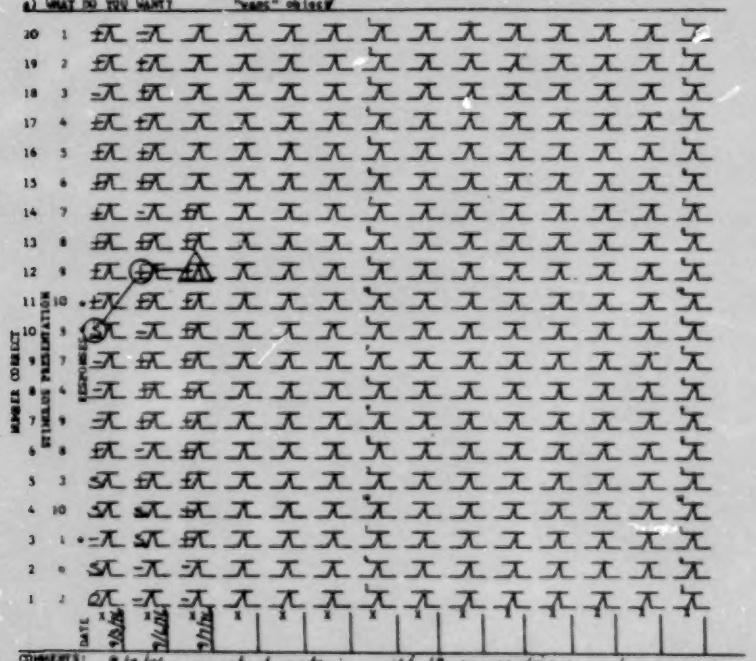
Type 2

Student Ralph Trainer Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items Not Symbolized: 1) nut 2) chip 3) paint 4) drum 5) raisin
6) Sacramento 7) gum 8) clock 9) record 10) ice cream

a) WHAT DO YOU WANT? "want" object



COMMENTS: 9/1/76 - reached criterion with 12 consecutive correct responses after session #1 (9/1/76), replaced glue with raisin.

*Example trials on Table 17

to percentages and record on the Scoring Form. If using Type 2 Forms, count the number of correct (+) speech and nonspeech scores and circle these three totals on that session's data column.

Figure 42 shows three sessions of Step 5 data with each session's "Number of Responses" graphed. Careful study of the columns indicate the student reached the numerical criterion performance for Step 5 on the final session.

4. Record percent correct responses for each session on Summary Form for Step 5. (See Figure 43 for sample Summary Form for Step 5). Continue training until criterion performance is reached.

5. Advance the student to Step 6 when criterion performance is reached and initiate generalization training for Step 5.

PROGRAMMING FOR GENERALIZATION

When the student has reached criterion performance on Step 5, parents, parent-surrogates, teachers, etc. should periodically present the non-symbolized trained items and ask "What want?" The item and verbal praise are given for a correct response. Gradually nontrained, nonsymbolized items should be introduced and the stimulus should be varied to include related questions which are longer and use other vocabulary as listed for Step 4.

Refer to Table 11 for examples of functional usages in different places with a variety of objects.

Board

Figure 43

Summary Form for Step 5

Speech Level: A Trainer's Stimulus Speech + Board

Student Ralph Trainer Steve

Date Training Started 9/3/76 Date Training Ended 9/7/76 Total Sessions to Criterion 3

Percent of Correct Responses Across Sessions

Session #	1	2	3														Speech Approximations
"want" object	50	60	(60)														
Date	9/3/76	9/6/76	9/7/76														

(Circled percentages represent criterion based on 12 consecutive correct responses.)

STEP 6

(Requesting Symbolized or Nonsymbolized Items)

"want (label)" or "want (object)"

GENERAL INSTRUCTIONS

Training Goal

To train the student to request items which may or may not be symbolized on the board using a two-part response "want (item)" or "want (object." This step continues the control concept formation.

Training Items

Five items that are reinforcing to the student and which are symbolized on the board, and five additional preferred items that are not symbolized on the board.

Board Display

No new symbols are added to either board display for this Step.

Procedures

Use the same procedures used in Steps 4 and 5. Figure 44 shows the training order for Step 6. Notice that this Step again is trained in three parts, "speech plus board," "speech alone," and "board alone," but only after Phase II.

SPECIFIC TRAINING INSTRUCTIONS

STEP 6a: TRAINER USES SPEECH AND BOARD

Step 6 is trained in two phases.

Phase I

1. Hold up each item, one at a time, and ask WHAT WANT? If the item is symbolized on the board the correct response must include the symbol "want" followed by the symbol for the item. If the item is not symbolized on the board the correct response is the student pointing to first the "want" symbol and then to the object. As in the previous Step, when a correct response occurs, give the item to the student.

   See the example trials for Phase I in Table 18. The examples in that Table are keyed to trials of the Sample Scoring Form for Phase I of Step 6 (Figures 45 and 46a).

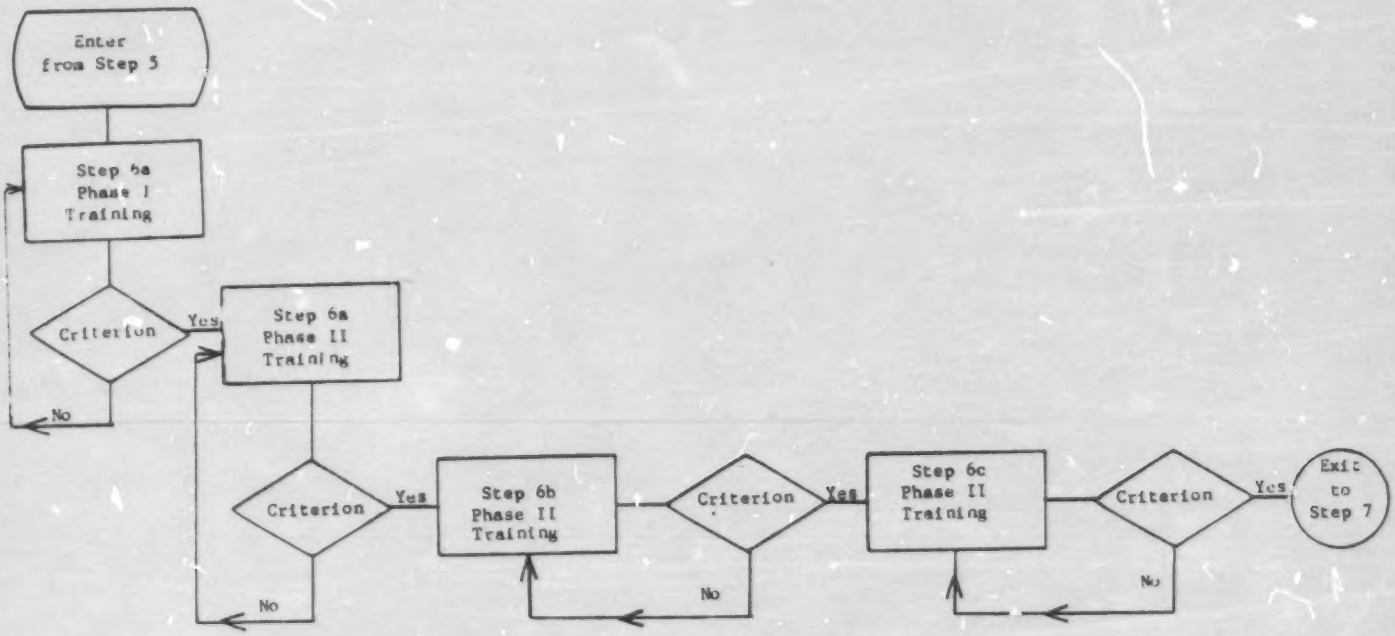


Figure 44: Order of Training for Step 6 of the Communication Board Program

Table 18

Example Trials* for Step 6a (Phase I)
Level B Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Type 1 Trial 1 Type 2 Trial 3 (Holds up perfume.) what want / WHAT WANT? OKAY! HERE'S THE PERFUME. (Gives student perfume. Scores [+/S] on Scoring Form.)	want perfume / UH UHUH (Student applies perfume.)
Type 1 Trial 3 Type 2 Trial 4 (Holds up cookie.) what want / WHAT WANT? wrong / WRONG. YOU HAVE A SYMBOL FOR COOKIE. SAY WANT COOKIE. (Points to want and then cookie on the student's board. Scores [-/S] on Scoring Form.) what want / WHAT WANT? MUCH BETTER. (Gives a piece of cookie to student.) (Since the student does have a symbol for cookie on her board, she should point to the symbols want cookie.)	want (points to cookie) / UH UHUH want cookie / UH UHUH
Type 1 Trial 7 Type 2 Trial 14 (Holds up cracker.) what want / WHAT WANT? GOOD JOB. HERE YOU GO. (Gives student cracker. Scores [+/S] on Scoring Form.) (Since the student does not have a symbol for cracker, she should point to the want symbol on her board and then to the cracker.)	want (points to cracker) / UH KUH KUH

*Example trials for this Table correspond to those trials with astericks (*) on

Board — Figure 45 — Type 1

Scoring Form for Step 6 (Phase 1)

Student Anna — Date 9/21/76 — Session # 1

Trainer Julie

Circle Speech Level: A (B) C — Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items Used: Symbolized 1) perfume 2) juice 3) cookie 4) candy 5) radio

Nonsymbolized 6) powder 7) phone 8) cracker 9) chip 10) apple

Present this item Ask, WHAT WANT?		Expected Response	Score	Present this item Ask, WHAT WANT?		Expected Response	Score
1.	(1)	*"want(label)"	+/- S	16.	(3)	"want"object	+/- S
2.	(6)	"want"object	+/- S	17.	(8)	"want"object	+/- S
3.	(3)	*"want(label)"	-/S	18.	(9)	"want"object	+/- S
4.	(4)	"want(label)"	+/- S	19.	(7)	"want"object	+/- S
5.	(7)	"want"object	+/- O	20.	(4)	"want(label)"	-/S
6.	(3)	"want"(label)"	+/- S	21.	(5)	"want(label)"	+/- S
7.	(8)	*"want"object	+/- S	22.	(6)	"want"object	+/- S
8.	(9)	"want(label)"	-/S	23.	(5)	"want(label)"	+/- S
9.	(2)	"want(label)"	+/- S	24.	(2)	"want(label)"	+/- S
10.	(10)	"want"object	-/S	25.	(9)	"want"object	-/S
11.	(6)	"want"object	O/O	26.	(10)	"want"object	+/- S
12.	(7)	"want"object	O/O	27.	(3)	"want(label)"	-/S
13.	(1)	"want"object	S/S	28.	(1)	"want(label)"	+/- S
14.	(8)	"want"object	+/- S	29.	(4)	"want(label)"	+/- S
15.	(2)	"want"(label)"	+/- S	30.	(10)	"want"object	+/- S

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (O).

Percent Summary for Session

	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech O	Speech +	Speech -	Speech S	Speech O
Score	21	0	6	1	2		27	3
Percent	70		20	3	7		90	7

Board — Figure 46a — Type 2

Scoring Form for Step 6 (Phase 1)

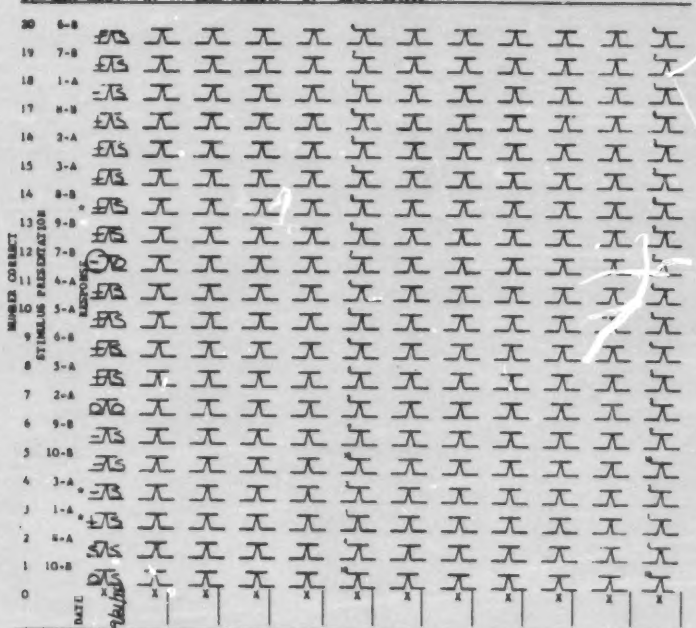
Student Anna — Trainer Julie

Circle Speech Level: A (B) C — Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Symbolized Items: 1) perfume 2) juice 3) cookie 4) candy 5) radio

Nonsymbolized Items: 6) powder 7) phone 8) cracker 9) chip 10) apple

A1 WHAT WANT? A1 "want (label)" A1 "want" object



2. Present the ten items three times each in a session (for a total of 30 trials) if using Type 1 Scoring Forms. Present the items twice if using Type 2 Scoring Forms.

3. If using Type 1 Forms, count the number of correct (+), incorrect (-), shaped (S), and no-response (0) for speech and nonspeech scores. Convert to percentages and record on the Scoring Form. If using Type 2 Forms, count the number of correct (+) speech and nonspeech scores and circle these three totals on that session's data column.

4. Record percent acceptable responses for each session on Summary Form for Step 6 beside Phase I (Figure 46d). Continue training until criterion performance is reached.

5. Advance the student to Step 6, Phase II when criterion performance is reached on Phase I.

Phase II

1. Place all 10 items at once in full view of the student. Call the student's attention to the variety of items. Being careful to not look directly at or to touch any item, ask WHAT WANT? The student may ask for any of the 10 items. The responses are considered correct if they meet the standards described in Phase I. Some students may need much prompting to respond initially. Students may also ask for only one of the ten items during successive trials. Although the trainer may encourage other selections, the student may ask for and receive any item any number of times.

2. If the item requested was consumable, replace the item in the display. If the item is non-consumable, request it back after the student has played with it for a short time. When all 10 items are displayed again, repeat the procedure.

   Continue the procedure until all trials on the Scoring Form (Step 6, Phase II) are completed (or until criterion is reached).

   Table 19 shows example trials for Phase II and is keyed to Figures 46b and 46c.

3. Tally, compute, and record responses on the scoring form and summary form (see Figure 46d for Sample Summary Form). Continue training until criterion performance is reached.

4. Advance the student to Step 6b when criterion performance is reached and initiate generalization training for Step 6.

Table 19

Example Trials* for Step 6a (Phase II)
Level B Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Type 1 Trial 1 Type 2 Trial 2	
(Display all 10 items on the table for student to see.)	
LOOK AT ALL THESE THINGS. YOU CAN HAVE ANY OF THESE YOU WANT. (Points to each item.)	
what want / WHAT WANT?	(points to cracker)
wrong / WRONG. YOU HAVE TO SAY WANT CRACKER. (Points to want on the student's board and then to the cracker. Scores [-/\0] on Scoring Form.)	
what want / WHAT WANT?	(points to cracker)
(Says nothing. Goes to next trial.)	
Type 1 Trial 2 Type 2 Trial 2	
what want / WHAT WANT?	want (points to cracker) / UH KA KA
HERE YOU GO. NICE TALKING! (Gives student cracker. Scores [+/\S] on Scoring Form.)	
Type 1 Trial 3 Type 2 Trial 3	
what want / WHAT WANT?	want juice / UH OO
NICE JOB. (Gives student a drink of juice. Scores [+/\S] on Scoring Form.)	

*Example trials for this Table correspond to those with astericks (*) on the Example Scoring Forms, Figures 46b and 46c.

Board

Figure 44b
Scoring Form for Step 6 (Phase II)

Type 1

Student Ann Date 10/1/76 Session # 1

Trainer Steve

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items Displayed: Symbolized 1) perfume 2) juice 3) cookie 4) candy 5) radio

Nonsymbolized 6) powder 7) phone 8) cracker 9) chip 10) apple

Display All Items Ask WHAT WANT?	Expected Response "want (label)" "want" object	Display All Items Ask WHAT WANT?	Expected Response "want (label)" "want" object
1.	• -/O	16.	/T
2.	• +/S	17.	/T
3.	• +/S	18.	/T
4.	+/S	19.	/T
5.	+/S	20.	/T
6.	+/S	21.	/T
7.	+/S	22.	/T
8.	+/S	23.	/T
9.	+/S	24.	/T
10.	+/S	25.	/T
11.	+/S	26.	/T
12.	+/S	27.	/T
13.	+/S ← reached criterion with 12 correct in a row.	28.	/T
14.	/T	29.	/T
15.	/T	30.	/T

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (O).

Percent Summary for Session

	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech O	Speech +	Speech -	Speech S	Speech O
Score	9/10	0	1/14	0	0	0	1/13	1/13
Percent	92		8					8

Board

Figure 44c
Scoring Form for Step 6 (Phase II)

Type 2

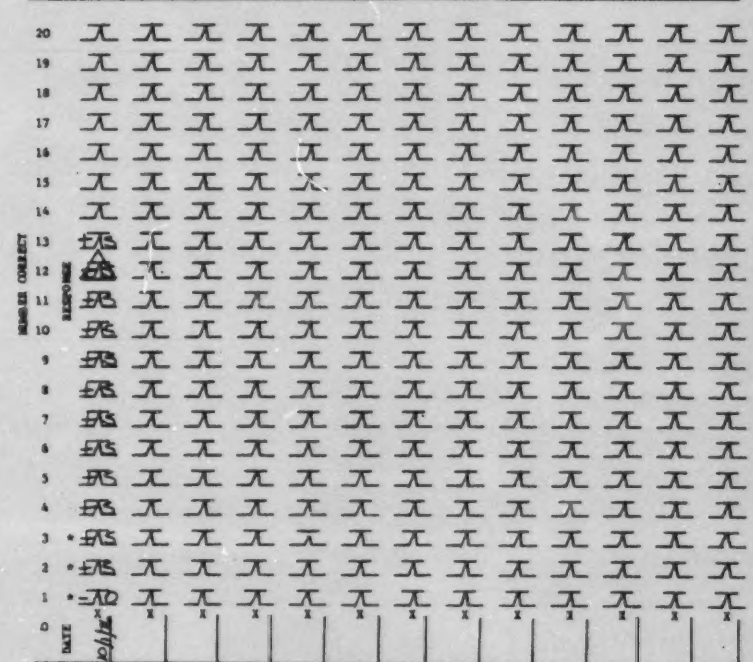
Student Ann Trainer Steve

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Symbolized Items: 1) perfume 2) juice 3) cookie 4) candy 5) radio

Nonsymbolized Items: 6) powder 7) phone 8) crackers 9) chip 10) apple

A) WHAT WANT "want (label)" or "want" object



COMMENTS: Student reached criterion with 12 correct in a row!

Board

Figure 46d

Summary Form for Step 6

Speech Level: B Trainer's Stimulus: Speech + Board

Student Ann Trainer Julie

Date Training Started 9/21/76 Date Training Ended 10/1/76 Total Sessions to Criterion 6

Percent Correct Responses Across Sessions

"want" "(label)" object

Phase	Session # 1	2	3	4	5	6	Speech Approximations
I	70	60	67	77	83		want - "uh"
II						(93)	
Date	9/21/76	9/22/76	9/23/76	9/27/76	9/29/76	10/1/76	

(Circled percentages represent criterion based on 12 consecutive correct responses.)

STEPS 6b and 6c: TRAINER USES SPEECH ALONE AND BOARD ALONE

Steps 6b and 6c are taught using procedures like those described for Steps 1 and 2. Only Phase II of Step 6 is used for "b" and "c" training.

PROGRAMMING FOR GENERALIZATION

Continue generalization training combining procedures as stated in Steps 4 and 5 where symbolized and non-symbolized items were used.

STEP 7

(Using "Yes" and "No" to Identify Item Labels)

GENERAL INSTRUCTIONS

Training Goal

The goal of this Step is twofold: 1) to train the use of "yes" and "no" when identifying labels for items; and 2) to establish "yes" and "no" as a verbal substitute for pointing. This is further training in reception, inasmuch as the student is required to recognize the differences between various item labels. In this case, however, a verbal response, "yes/no," is used by the student to indicate that he or she can recognize that the visual presentation of the item matches the verbal item label provided by you (requiring a "yes" response); or, alternatively, that the student can recognize that the visual presentation of the item does not match the verbal item label provided by you (requiring a "no" response).

Training Items

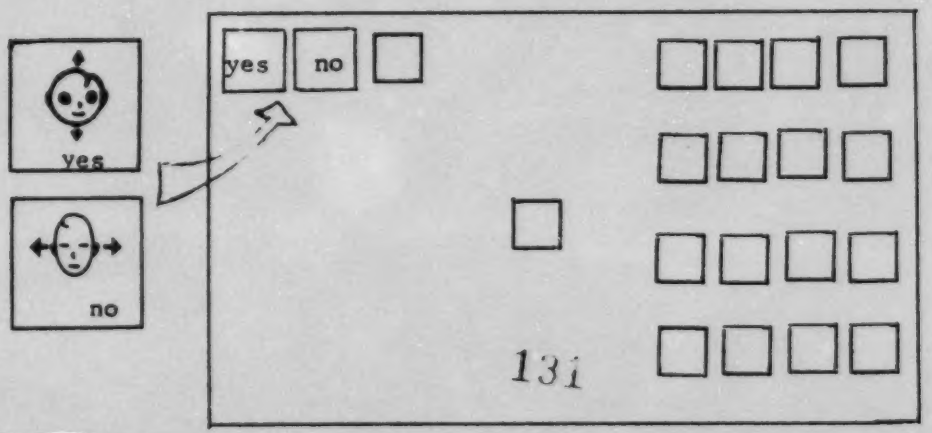
Sixteen items the student can easily and accurately label both expressively and receptively. This requires all items used in this Step to be symbolized on the student's board.

It is extremely important that the objects used in Step 7 be selected carefully. It is recommended that Step 1 and 2 Skill Tests be readministered at this time. Select items for use in Step 7 only when the student correctly responded to both trials for that object in each Skill Test. If no maintenance training has occurred since Step 1 and 2 training, some retraining may be necessary before beginning Step 7.

Student's Board Display

Two new symbols are added to the students board for this Step. The "yes" and "no" symbols are placed beside the "no card" symbol in the upper left hand corner of the board (see below). The example uses a Peabody rebus for "yes" and "no."

Figure 47: Student's Board for Step 7



Use of Trainer's Board

Figure 48 shows the symbols used from the Trainer's board for Step 7.

Procedures

Criterion and training procedures remain as in previous Steps. As with the other Steps, once the student achieves criterion with the trainer using speech and board together the Step is retrained with speech alone and then board alone.

SPECIFIC INSTRUCTIONS

STEP 7a: TRAINER USES SPEECH AND BOARD

Skill Test Instructions

This Step has a Skill Test that is to be given before beginning training and after the training of certain phases within the Step.

1. In giving the Skill Test, all 16 items are openly displayed to the student. Hold up each item, one at a time, and ask IS THIS A (ITEM)? Follow the order of presentations in the Skill Test Scoring Form for Step 7 found in Figure 49.

2. On one-half the trials, the item shown to the student will be the same (or match) the verbal label of the item provided by you (e.g., you hold up a cup and ask, IS THIS A CUP?). The correct response for these trials would be "yes."

3. On the remaining half of the trials, the item presented does not match the label of the item provided (e.g., you hold up a cup and ask, IS THIS A PENCIL?). The correct response for these trials is "no."

4. The "Training and Correction Procedure" is used when administering the Skill Test for Step 7. The example trials in Table 21 are provided to show how this is done. The examples given are keyed to Trials 22, 23, 29 and 32 on the sample Skill Test Scoring Form for Step 7 (Figure 49).

5. Criterion for the Skill Test is 80 percent or more acceptable responses in a session or 12 acceptable responses in a row in a session. (Use the 32-trial table in Appendix A for deriving percentages).

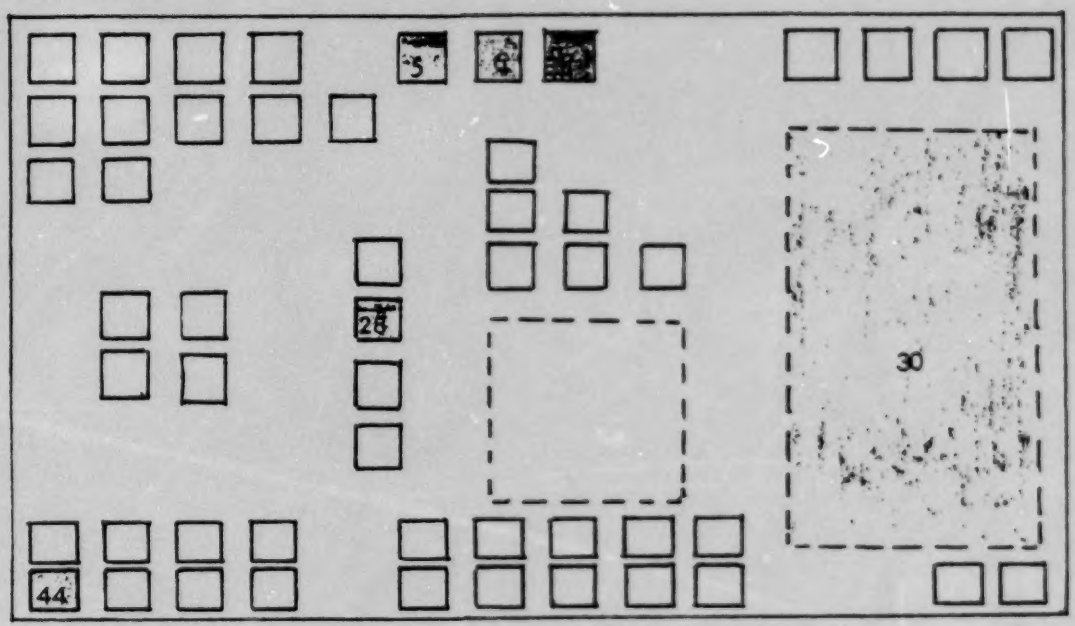
6. Administer the Skill Test when indicated in the Training Instructions section. The student is advanced to Step 7b when criterion performance on the Skill Test is reached or until it is apparent the student is not learning the concept.

Training Instructions

The training of the Yes-or-No concept is fairly lengthy and involves

Figure 48

Trainer's Board for Step 7*



5. correct
6. good
7. wrong
28. is
30. (nouns)
44. what

* See Figure 4 for full discription of the Trainer's Symbols.

Table 21

Example Trials* for Step 7a Skill Test
Level A Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Trial 22	
(Holds up crayon.) ? crayon / IS THIS A CRAYON? YES (Points to yes on student's board.)	yes / (no response)
THAT'S RIGHT! YES IT'S A CRAYON. (Pats student on back. Scores [S⅄] on Skill Test Scoring Form.)	
(The trainer prompted the student to point to the yes symbol.)	
Trial 24	
(Holds up coat.) ? coat / IS THIS A COAT?	coat / (norresponse)
wrong ? coat / WRONG. I ASKED "IS THIS A COAT? YES. (Points to yes on student's board. Scores [-⅄] on Scoring Form.)	
(Holds up coat.) ? coat / IS THIS COAT?	coat / (no response)
(Says nothing. Goes to the next trial.)	
Trial 29	
(Holds up hat.) ? radio / IS THIS A RADIO?	no / (no response)
GREAT! THAT'S RIGHT! (Pats student on back. Scores [+⅄] on Skill Test Scoring Form.)	
Trial 30	
(Holds up Kleenex.) ? Kleenex / IS THIS KLEENEX?	yes / (no response)
RIGHT ON! Yes / YES IT'S A KLEENEX. (Pats student on back. Scores [+⅄] on Skill Test Scoring Form.)	

*Example trials for this Table correspond to those with astericks (*) on the Example Skill Test Scoring Form Figure 49.

Figure 49

Board Signing

SKILL TEST SCORING FORM FOR STEP 7

Student Ralph Date 10/4/76 Session # 1

Trainer Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

The trainer is free to select items which meet the needs of each student, based on the student's ability to label the objects. The items used in trials 1-16 are repeated in randomized order in trials 17-32. If the blank in the SHOW column is followed by (Y), place that same item in the blank in the ASK column to elicit a "yes" answer. If there is an (N) after the blank in the SHOW column, use another of the 16 items in the ASK column to elicit a "no" answer. Each item should have a yes and a no question. Remember that criterion is based on all 32 trials.

SHOW	ASK	SCORE	SHOW	ASK	SCORE
1. ball (Y)	IS THIS A ball?	+/-	17. pop (Y)	IS THIS A pop?	+/-
2. car (N)	IS THIS A hat?	+/-	18. ball (N)	IS THIS A car?	S/-
3. radio (N)	IS THIS A ball?	+/-	19. spoon (N)	IS THIS A book?	S/-
4. hat (Y)	IS THIS A hat?	+/-	20. radio (Y)	IS THIS A radio	S/-
5. pop (N)	IS THIS A spoon?	+/-	21. cookie (N)	IS THIS A car?	S/-
6. book (Y)	IS THIS A book?	S/-	* 22. crayon (Y)	IS THIS A crayon	S/-
7. spoon (Y)	IS THIS A spoon?	+/-	23. car (Y)	IS THIS A car?	+/-
8. bubbles (Y)	IS THIS A bubbles	S/-	* 24. coat (Y)	IS THIS A coat?	+/-
9. crayon (N)	IS THIS A plate?	S/-	25. book (N)	IS THIS A pop?	+/-
10. candy (Y)	IS THIS A candy?	S/-	26. bubbles (N)	IS THIS A crayon	S/-
11. plate (N)	IS THIS A hat?	+/-	27. candy (N)	IS THIS A ball?	S/-
12. glasses (N)	IS THIS A cookie?	+/-	28. ball (Y)	IS THIS A ball?	S/-
13. shoe (Y)	IS THIS A shoe?	+/-	* 29. hat (N)	IS THIS A radio?	+/-
14. coat (N)	IS THIS A glasses?	+/-	30. plate (Y)	IS THIS A plate?	+/-
15. ball (N)	IS THIS A spoon?	+/-	31. shoe (N)	IS THIS A ball?	+/-
16. cookie (Y)	IS THIS A cookie?	S/-	* 32. glasses (Y)	IS THIS A glasses	+/-

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech				Speech				Acceptability	
	+	S	-	0	+	-	S	0	+	0
Score	2		15	13	2					
Percent	6		50	41	6					

14 Phases for those students who do require the entire training sequence. Of course, the student can exit the Step by reaching criterion on the Skill Test which is given between various phases. Table 20 summarizes the training phases included in this Step.

Phase I

1. Select just one item for Phase I training (e.g., ball). This item will be used for all trials in this phase.

2. Hold up the item and ask, WHAT IS THIS? The student must respond with the correct label (e.g., "ball"). Use the "Training and Correction Procedure" for incorrect or no responses.

3. While continuing to hold up the item, ask IS THIS A (ITEM)?, e.g., IS THIS A BALL? In Phase I the label in the question will always match the item presented, requiring a "yes" response from the student.

Note: Some students may say "yes--ball" or "ball--yes." This is considered a correct response, but you should attempt to elicit from the student just a "yes" response if at all possible since the addition of the item label may cause some confusion in later phases.

4. In the unlikely event that the student does not label the item when initially asked WHAT IS THIS?, proceed to the next trial without asking the second question, IS THIS A (ITEM)? The second question can still be asked, however, if a correct labeling response is given following the use of the "Training and Correction Procedure."

5. Use either the Type 1 or Type 2 Scoring Form for Step 7 (Phases I and II) for recording responses. As indicated, these scoring forms (Figures 50 and 51) are used for both Phase I and Phase II. Two responses are required from the student on each trial. The first is a labeling response for the item presented; the second is for the expected "yes" response in Phase I (or the expected "no" response in Phase II). The total is a combination of the two responses and includes only those trials in which both responses are correct. The sample Scoring Form for Step 7 (Phases I and II) illustrates how scores are computed. Percents are recorded separately for labeling (ball) and for the "yes" responses required in Phase I. The total is based only on those trials in which both responses are intelligible, as indicated by the circles around the trial numbers on Type 1 forms. Only total percent intelligible responses determine criterion performance and only total percent intelligible responses are recorded on the Summary Form for Step 7 (Figure 78).

Note: Some trainers using Step 7 for the first time have found Type 1 forms are much easier to follow. Once you are more familiar with the Phase, Type 2 forms may again be sufficient.

Table 20

SUMMARY OF 14 TRAINING PHASES IN STEP 7

Phase	Item(s) Displayed	You Ask,	Correct Response	You Ask,	Correct Response
I	ball	WHAT IS THIS?	"ball"	IS THIS A BALL?	"yes"
II	ball	WHAT IS THIS?	"ball"	IS THIS A _____?	"no"
III	ball	WHAT IS THIS?	"ball"	IS THIS A BALL?	"yes"
	ball	WHAT IS THIS?	"ball"	IS THIS A _____?	"no"
IV	ball			IS THIS A BALL?	"yes"
	ball			IS THIS A _____?	"no"
V	car	WHAT IS THIS?	"car"	IS THIS A CAR?	"yes"
	car	WHAT IS THIS?	"car"	IS THIS A _____?	"no"
VI	car			IS THIS A CAR?	"yes"
	car			IS THIS A _____?	"no"
VII	ball	WHAT IS THIS?	"ball"	IS THIS A BALL?	"yes"
	ball	WHAT IS THIS?	"ball"	IS THIS A _____?	"no"
	car	WHAT IS THIS?	"car"	IS THIS A CAR?	"yes"
	car	WHAT IS THIS?	"car"	IS THIS A _____?	"no"
		Administer Skill Test			
VIII	ball			IS THIS A BALL?	"yes"
	ball			IS THIS A _____?	"no"
	car			IS THIS A CAR?	"yes"
	car			IS THIS A _____?	"no"
		Administer Skill Test			
IX	hat	WHAT IS THIS?	"hat"	IS THIS A HAT?	"yes"
	hat	WHAT IS THIS?	"hat"	IS THIS A _____?	"no"
X	ball			IS THIS A BALL?	"yes"
	ball			IS THIS A _____?	"no"
	car			IS THIS A CAR?	"yes"
	car			IS THIS A _____?	"no"
	hat			IS THIS A HAT?	"yes"
	hat			IS THIS A _____?	"no"
		Administer Skill Test			
XI	cup	WHAT IS THIS?	"cup"	IS THIS A CUP?	"yes"
	cup	WHAT IS THIS?	"cup"	IS THIS A _____?	"no"
XII	ball			IS THIS A BALL?	"yes"
	ball			IS THIS A _____?	"no"
	car			IS THIS A CAR?	"yes"
	car			IS THIS A _____?	"no"
	hat			IS THIS A HAT?	"yes"
	hat			IS THIS A _____?	"no"
	cup			IS THIS A CUP?	"yes"
	cup			IS THIS A _____?	"no"
		Administer Skill Test			
XIII	apple	WHAT IS THIS?	"apple"	IS THIS AN APPLE?	"yes"
	apple	WHAT IS THIS?	"apple"	IS THIS A _____?	"no"
XIV	car			IS THIS A CAR?	"yes"
	car			IS THIS A _____?	"no"
	hat			IS THIS A HAT?	"yes"
	hat			IS THIS A _____?	"no"
	cup			IS THIS A CUP?	"yes"
	cup			IS THIS A _____?	"no"
	apple			IS THIS AN APPLE?	"yes"
	apple			IS THIS A _____?	"no"
		Administer Skill Test			

Continue Phases XIII and XIV, introducing the remaining items (Phase XIII); administer Skill Test after each set of four items are trained in combination (Phase XIV) until criterion performance is reache

6. Continue training in Phase I until criterion performance (80 percent or better (total) intelligible responses or 12 consecutive (total) intelligible responses are given in one training session). Advance the student to Phase II of Step 7 when criterion performance is reached.

Phase II

1. Present the student with the same item (e.g., ball) used in Phase I for each trial and ask, WHAT IS THIS? The student must supply the correct label (e.g., "ball"). Use the "Training and Correction Procedure" when an incorrect or no response is made.

2. While continuing to hold up the item, ask IS THIS A_____? The blank indicates that you substitute the label of one of the other training items (e.g., you hold up a ball and ask, IS THIS A PENCIL?). The word you substitute should vary from trial to trial. The correct response from the student is always "no" because the label in question will not match the item (ball) shown. It is most important that the labels in the question (as indicated by the blank space) be changed from trial to trial. For example, in Trial 1 you would hold up the ball and ask, IS THIS A PENCIL? In Trial 2 you would hold up the ball and ask, IS THIS A HAT?, etc. As usual, the "Training and Correction Procedure" is used for incorrect or no responses.

3. Use the Scoring Form for Step 7 (Phases I and II) for recording responses. A sample scoring form filled out for Phase II is presented in Figures 52 and 53. Scores are computed separately for labeling (ball) and for the "no" response required in Phase II. Again, the total is based only on those trials in which both responses are intelligible (as indicated by the circles around the trial numbers in Type 1 forms).

4. Continue training until criterion performance is achieved. Advance the student to Phase III of Step 7 when the student reaches criterion.

Phase III

1. This phase is a combination of both the "yes" and "no" responses trained in Phase I and Phase II, respectively. The same item (e.g., ball) is used for all 32 trials.

2. Present the item and ask, WHAT IS THIS? For correct responses the student must provide the correct label (e.g., "ball").

3. You then ask, IS THIS A (ITEM)? On one-half the trials the item (ball) and the label in question will match. For example, you hold up the ball and ask, IS THIS A BALL? Correct response for these trials is "yes."

4. On the remaining one-half trials the item presented (ball) will not match the label in question. For example, you hold up the ball and ask, IS THIS A CAR? Correct responses for these trials is "no."

5. Use the Scoring Forms for Step 7 (Phases III, V, IX, XI, and XIII) shown in Figures 54 and 55. All of these phases (III,V, IX, XI, and XIII use the same procedure although the training items will change. Scores are again recorded separately for labeling responses (e.g., ball) just like the Scoring Form for Step 7 (Phases I and II). In this scoring form, however, the "yes/no" responses are combined since each is presented for 16 trials. Again, the total is based on only those trials in which both responses (labeling and "yes" or "no") are correct for the same trial, as indicated by the circles around the trial numbers on Type 1 forms. And, as before, criterion performance is based on total trials acceptable.

6. Continue training until criterion performance is reached. Advance the student to Phase IV of Step 7 when he or she achieves criterion performance.

Phase IV

1. This phase again uses the same item (e.g., ball) as Phases I, II, and III. Phase IV is identical to Phase II except the initial question, WHAT IS THIS?, is omitted.

2. For each of the 32 trials hold up the item (ball) and ask, IS THIS A (ITEM)? On one-half the trials the item label in the question will match the item shown (e.g., you hold up the ball and ask, IS THIS A BALL?). The correct response is "yes."

3. On one-half the trials the item label in the question will not match the item shown (e.g., you hold up the ball and ask IS THIS A HAT?). The correct response for these trials is "no."

4. Use the Scoring Forms for Step 7 (Phases IV and VI) shown in Figures 56 and 57. Both Phase IV and VI use identical procedures except for the training item presented. Enter only the percent acceptable responses for the session in the Summary Form for Step 7 (Figure 78).

5. Continue training until criterion performance is reached, and then advance the student to Phase V of Step 7.

Phase V

1. Phase V is identical to Phase III except a new training item (e.g., car) is introduced. The new item is presented for each of the 32 trials in the session.

2. Hold up the item (e.g., car) and ask, WHAT IS THIS? For a correct response the student must provide the label (e.g., "car").

3. Next, you ask IS THIS A (ITEM)? On one-half the trials the item label in the question will match the item shown (e.g., you hold up the car and ask, IS THIS A CAR?). For these trials the correct response is "yes."

4. On the remaining one-half trials the item label in the question will not match the item shown (e.g., you hold up the car and ask, IS THIS A HAT?).

5. Use the Scoring Form for Step 7 (Phases III, V, IX, XI, and XIII, Figures 58 and 59). Remember, only the total percent intelligible is recorded in the Summary Form for Step 7 (Figure 78).

6. Continue training in Phase V until criterion performance is reached, then advance the student to Phase VI.

Note: If the student has difficulty with Phase V, you can go back to Phase I, using the new item (car), and progress through Phases II, III, and IV. If this is required, the percent correct responses should be recorded as such across from the appropriate phase number in the Summary Form for Step 7 (Figure 78).

Phase VI

1. This phase is identical to Phase IV, except the new training item (e.g., car) is used.

2. For each of the 32 trials, hold up the item (car) and ask, IS THIS A (ITEM)? On one-half the trials the label in the question will match the item shown (e.g., you hold up the car and ask, IS THIS A CAR?). The correct response for these trials is "yes."

3. On one-half the trials the item label in the question will not match the item shown (e.g., you hold up the car and ask,IS THIS A SOCK?). The correct response for these trials is "no."

4. Use the Scoring Form for Step 7 (Phases IV and VI). A sample Scoring Form for Phase VI is shown in Figures 60 and 61. Remember to enter the percent intelligible responses for the session in the Summary Form for Step 7 (Figure 78).

5. Continue training until criterion performance is achieved, then advance the student to Phase VII of Step 7.

Phase VII

1. This phase is a combination of Phases III and V, using the two items which have been trained so far.

2. Hold up one of the two items randomly, and on separate trials, as indicated on the Scoring Form for Step 7 (Phase VII) shown in Figure 26. Ask WHAT IS THIS? For correct responses the student must provide the correct item label (e.g., say "ball" when the ball is presented, and say "car" when the car is presented). Use the "Training and Correction procedure for incorrect or no responses.

3. Following an intelligible labeling response, you then ask the second question, IS THIS A (ITEM)? On one-half the trials the item label in the question will match the item shown, requiring a "yes" response from the student. For example, you will hold up the ball and ask, IS THIS A BALL? or you will hold up the car and ask IS THIS A CAR?

4. On one-half the trials the item label in the question will not match the item displayed, requiring a "no" response. For example, you will hold up the ball and ask, IS THIS A CHAIR? or you will hold up the car and ask, IS THIS A COOKIE?

5. On the Scoring Form for Step 7 (Phase VII) shown in Figures 62 and 63, scores are recorded separately for item labeling responses (e.g., "ball" and "car") and for "yes/no" responses. Again, the total is based on only those trials in which both responses (item labeling and "yes" or "no") are intelligible for the same trial as shown by the circles around the trial numbers. Criterion performance is based on total trials intelligible.

6. Continue training until criterion performance is reached. Administer the Skill Test for Step 7a when the student has achieved criterion performance on Phase VII. If criterion is met on the Skill Test, advance the student to Step 7b. If the student fails to reach criterion on the Skill Test, advance the student to Phase VIII of Step 7. Remember to enter the percent intelligible from the Skill Test on the Summary Form for Step 7 (Figure 78).

Note: Phase VII of Step 7 is probably the most difficult phase in this Step for most students. This is likely due to the fact that the student must make "yes" or "no" responses based upon the discrimination between two items (e.g., "ball" and "car"). The chances of a student successfully completing Step 7 are excellent if he or she can achieve criterion performance in this phase.

Phase VIII

1. This phase is identical to Phase VII, except the initial question, WHAT IS THIS?, is omitted.

2. Present the two items (e.g., ball and car) randomly, and on separate trials as shown in the Scoring Form for Step 7 (Phase VIII) in Figures 64 and 65. For each trial, ask, IS THIS A (ITEM)?

3. On one-half the trials the item label in the question will match the item displayed, requiring a "yes" from the student. For example, you will hold up the ball and ask, IS THIS A BALL? or you will hold up the car and ask, IS THIS A CAR?

4. On one-half the trials the item labeled in the question will not match the item displayed, requiring a "no" response (e.g., you will hold up the ball and ask, IS THIS A SPOON? or you will hold up the car and ask, IS THIS A COMB?).

5. Continue training until criterion performance is achieved. Give the Skill Test for Step 7a when the student reaches criterion performance. If the student achieves criterion on the Skill Test, begin training Step 7b. If not, train the student on Phase IX of Step 7a.

Phase IX

1. This phase is identical to Phases III and V except a new training item (e.g., hat) is used.

2. Display the item for each trial and ask, WHAT IS THIS? The student is required to provide the appropriate label (e.g., "hat" for correct responses.

3. Following an intelligible labeling response for each trial, next ask IS THIS A (ITEM)? On one-half the trials the item presented will match the item label in the question, requiring a "yes" response from the student. On one-half the trials the item displayed will not match the item label in the question, requiring a "no" response from the student.

4. Use the Scoring Form for Step 7 (Phases III, V, IX, XI, XIII) presented in Figures 66 and 67. Record scores for labeling (e.g., "hat"), "yes/no," and total (i.e., those trials in which the student correctly labels the item and gives the correct "yes/no" response in the same trial).

5. Continue training to criterion. Advance the student to Phase X when criterion has been met.

Phase X

1. This phase combines all three of the items trained so far (e.g., ball, car, hat).

2. Present randomly, and separately, each of the three items for an equal number of trials as illustrated in the Scoring Form for Step 7 (Phase X) in Figures 68 and 69.

3. For each trial, hold up the item and ask, IS THIS A (ITEM)?; e.g., IS THIS A BALL?, IS THIS A CAR?, or IS THIS A HAT?

4. On one-half the trials the item presented will match the item label in the question. For example, you hold up the car and ask, IS THIS A CAR? Correct responses for these trials is "yes."

5. On the remaining one-half trials, the item displayed will not match the item label in the question; e.g., you hold up the hat and ask, IS THIS A TABLE? The correct response for these trials is "no."

6. Enter the percent correct "yes/no" responses in the Summary Form for Step 7 as usual. Note that the 36-trial conversion table in Appendix A is needed for Type 1 forms.

7. Continue training until crtierion performance is reached, then administer the Skill Test, begin training Step 7b. If not, go on to Phase XI of Step 7a.

Phase XI

1. This phase is identical to Phases III, V, and IX except a new item (e.g., cup) is trained.

2. Display the item for each trial and ask, WHAT IS THIS? The student is required to provide the appropriate label (e.g., "cup") for correct responses.

3. Following a correct labeling response, next ask IS THIS A (ITEM)? On one-half the trials the item shown will match the item label in the question, requiring a "yes" response from the student. On the remaining one-half trials the item presented will not match the item label in the question, requiring a "no" response from the student.

4. Use the Scoring Form for Step 7 (Phases III, V, IX, XI, and XIII) presented in Figures 70 and 71 to record scores for labeling (e.g., "cup"), "yes" or "no," and total (i.e., those trials in which the student correctly labels the item and then gives the correct "yes" or "no" response in the same trial).

5. Continue training to criterion. Advance the student to Phase XII when criterion is met.

Phase XII

1. This phase combines all four of the items trained so far (e.g., ball, car, hat, and cup).

2. Present randomly, and separately, each of the four items for an equal number of trials, as illustrated in the Scoring Form for Step 7 (Phases XII and XIV) in Figures 72 and 73.

3. For each trial, hold up the item and ask, IS THIS A (ITEM)?: e.g., IS THIS A BALL?, CAR?, HAT?, or CUP?

4. On one-half the trials the item presented will match the item label in the question, requiring a "yes" response from the student.

5. On the remaining one-half trials the item presented will not match the item label in the question, requiring a "no" response from the student.

6. Compute percent of "yes" and "no" responses in the Scoring Form for Step 7 (Phases XII and XIV) and enter percent correct responses on the Summary Sheet for Step 7 (Figure 78).

7. Continue training to criterion then administer the Step 7a Skill Test. Advance to Phase XIII or Step 7b as indicated.

Phase XIII

1. This phase is identical to Phases III, V, IX, and XI except a new item (e.g., apple) is trained.

2. Display the item for each trial and ask, WHAT IS THIS? The student is required to provide the appropriate label (e.g., "apple") for correct responses.

3. Following a correct labeling response, next ask IS THIS A (ITEM)? On one-half the trials the item presented will match the item label in the question, requiring a "yes" response. On the remaining one-half trials the item displayed will not match the item in the question, requiring a "no" response from the student.

4. Use the Scoring Form for Step 7 (Phases III, V, IX, XI, and XIII) presented in Figures 74 and 75. Record scores for labeling (e.g., "apple," "yes/no") and total (i.e., those trials in which the student correctly labels the item and gives the correct "yes" or "no" response in the same trial).

5. Continue training to criterion. Advance the student to Phase XIV when criterion is met.

Phase XIV

1. Phase XIV is a repeat of Phase XII, using the four most recently trained items. This would include car, hat, cup, and apple. The first item trained (e.g., ball) is now dropped from the sequence.

2. Present randomly, and separately, each of the four items for an equal number of trials, as illustrated in the Scoring Form for Step 7 (Phases XII and XIV) in Figures 76 and 77.

3. For each trial, hold up the item and ask, IS THIS A (ITEM)?; e.g., IS THIS A CAR;, HAT;, CUP?; or APPLE?

4. On one-half the trials the item presented will match the item label in the question, requiring a "yes" response from the student.

5. On the remaining one-half trials the item presented will not match the item label in the question, requiring a "no" response from the student.

6. Record the percent of "yes" and "no" responses in the Scoring Form for Step 7 (Phases XII and XIV) and enter the percent correct responses on the Summary Form for Step 7 (Figure 78).

7. Continue training until criterion performance is reached, then administer the Skill Test for Step 7a.

8. If the student achieves criterion performance on the Skill Test begin training Step 7b. If not, return to Phase XIII and train a new item.

9. The remainder of the training sequence is a repeat of Phases XIII and XIV in which a new item is trained by itself (Phase XIII), then in combination with the three other most recently trained items (Phase XIV). Phase XIV will never include more than four items. Give the Skill Test after the combined training of each set of four items (Phase XIV). This training continues until the entire list of 16 items has been trained or until the Skill Test is passed.

10. If the student completes training on all 16 items and still does not achieve criterion on the Skill Test, you should use the Skill Test as a training program until the student does achieve criterion performance. When using the Skill Test as a training program, make sure that items are presented randomly in each session and that there is an equal number of "yes" and "no" responses required.

11. Initiate the Programming for Generalization procedures when criterion performance is reached.

STEPS 7b and 7c: SPEECH AND BOARD ALONE

After achieving criterion on the Step 7 Skill Test with the trainer using speech and board train the Step again, using speech alone and then board alone until criterion performance is achieved on each stimuli's Skill Test. If training is warranted begin on Phase VIII and progress through the later Phases. There is no need to go back to simpler Phases unless the student encounters difficulty with Phase VIII.

Frequently, this Step is very difficult for students. If training is required for more than 40 sessions on either condition, discontinue training and begin Step 8.

SUMMARY FORM FOR STEP 7

The sample Summary Form for Step 7 in Figure 78 shows progress through the various Phases in the Step, and also depicts percent correct responses on the Skill Test given at the appropriate times.

PROGRAMMING FOR GENERALIZATION

Upon completion of Step 7, parents, parent-surrogates, teachers, etc. should frequently present to the student items he/she can label and ask the question, "Is this a (same-item label)?" or "Is this a (different-item label)?"

As the student appears to be maintaining a consistent and high level of correct responding across different persons and in different settings different cues should gradually be included. Examples of additional questions which could be asked centering around toileting might be: "Do you need to potty?", "Are you in the bathroom?", "Did you potty?" Various questions which might be asked around mealtime could be: "Are you sitting in a chair?", "Are you drinking (milk/water/juice)?", "Are you eating (sandwich/cake/salad)?"

Questions requiring a yes or no response should be presented in a variety of settings and be appropriate according to the setting.

Figure 10 Type 1

Scoring Form for Step 7 (Phases I and II)

Student Ralph Date 10/7/76 Session # 2

Trainer Steve

Circle Speech Level: A B C Circle Treatment's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

List item used if different than the example (ball) on the scoring form:

Circle appropriate phase above.

	Phase I: Step 7	Phase II: Step 7
	Ask, WHAT IS THIS? Ask, IS THIS A BALL? (Phase I); IS THIS A ___? (Phase II)	Ask, WHAT IS THIS? Ask, IS THIS A BALL? (Phase I); IS THIS A ___? (Phase II)
1.	✓	✓
2.	✓	✓
3.	✓	✓
4.	✓	✓
5.	✓	✓
6.	✓	✓
7.	✓	✓
8.	✓	✓
9.	✓	✓
10.	✓	✓
11.	✓	✓
12.	✓	✓
13.	✓	✓
14.	✓	✓
15.	✓	✓
16.	✓	✓
17.	✓	✓
18.	✓	✓
19.	✓	✓
20.	✓	✓
21.	✓	✓
22.	✓	✓
23.	✓	✓
24.	✓	✓
25.	✓	✓
26.	✓	✓
27.	✓	✓
28.	✓	✓
29.	✓	✓
30.	✓	✓
31.	✓	✓
32.	✓	✓

Record response assessments as correct (+); incorrect (-); cheated or attempted (@); or no response (NR). For Level C only, score each trial as acceptable or a total response (+); ... not acceptable or a total response (0).

Percent Summary for Session

		Nonspeech			Speech		Acceptable Low
		+	-	0	+	0	+ 0
Label	Score	22	6	3	1		
	Percent	69	19	9	3		
"Yes" (Phase I)	Score	18	5	7	2		
"No" (Phase II)	Percent	56	16	22	6		
Total	Score	14					
	Percent	44					

(Circled trials indicate student answered both trials correctly)

Figure 11 Type 4

Scoring Form for Step 7 (Phases I and II)

Student Ralph Trainer Steve

Circle Speech Level: A B C Circle Treatment's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase above.

List (item used) _____ a) WHAT IS THIS? "Label" b) IS THIS A (Label)? "yes"(I) "no"(II)

NUMBER CORRECT	a→b	a→b	a→b	a→b	a→b	a→b	a→b
20	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
19	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
18	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
17	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
16	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
15	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
14	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
13	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
12	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
11	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
10	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
9	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
8	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
7	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
6	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
5	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
4	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
3	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
2	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
1	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
0							
DATE	10/7/76	10/8/76					

COMMENTS: Dot between "a" column + "b" column indicates that student answered both questions correctly.

Figure 52 Type 1

Record Signing

Recording Form for Step 7 (Phases I and II)

Student: Ralph Trainer: Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase above.

List items used: _____ a) WHAT IS THIS? "Label" b) IS THIS A (label)? "yes"(+) "no"(-)

	a	b	a	b	a	b	a	b	a	b	a	b	a	b
1.	+	+												
2.	+	+												
3.	+	+												
4.	+	+												
5.	+	+												
6.	+	+												
7.	+	+												
8.	+	+												
9.	+	+												
(10)	+	+												
11.	+	+												
12.	+	+												
(13)	+	+												
14.	+	+												
15.	+	+												
(16)	+	+												
(17)	+	+												
(18)	+	+												
(19)	+	+												
(20)	+	+												
(21)	+	+												
(22)	+	+												
(23)	+	+												
(24)	+	+												
(25)	+	+												
(26)	+	+												
(27)	+	+												
(28)	+	+												

Record response components as correct (+); incorrect (-); skipped or prompted (0); or as response (NR). For Level C only, score each trial as acceptable as a total response (+), or not acceptable as a total response (0).

Percent Summary for Session

		Nonspeech			Speech			Acceptability	
		+	/	-	0	0	+	-	0	0
Label:	Score	28		1	1	2				
	Percent	88		3	3	6				
Yes (Phase I):	Score	19		6	6	1				
No (Phase II):	Percent	59		19	19	3				
Total:	Score	47								
	Percent	53								

(Circled trials indicate student answered both questions correctly).

Board Signing

Figure 53 Type 2

Recording Form for Step 7 (Phases I and II)

Student: Ralph Trainer: Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase above.

List items used: _____ a) WHAT IS THIS? "Label" b) IS THIS A (label)? "yes"(+) "no"(-)

	a	b	a	b	a	b	a	b	a	b	a	b	a	b
20	+	+	+	+	+	+	+	+	+	+	+	+	+	+
19	+	+	+	+	+	+	+	+	+	+	+	+	+	+
18	+	+	+	+	+	+	+	+	+	+	+	+	+	+
17	+	+	+	+	+	+	+	+	+	+	+	+	+	+
16	+	+	+	+	+	+	+	+	+	+	+	+	+	+
15	+	+	+	+	+	+	+	+	+	+	+	+	+	+
14	+	+	+	+	+	+	+	+	+	+	+	+	+	+
13	+	+	+	+	+	+	+	+	+	+	+	+	+	+
12	+	0	+	+	+	+	+	+	+	+	+	+	+	+
11	+	+	+	+	+	+	+	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+	+	+	+	+	+	+	+
9	-	+	+	+	+	+	+	+	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+	+	+	+	+	+	+
7	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5	-	-	+	+	+	+	+	+	+	+	+	+	+	+
4	+	-	+	+	+	+	+	+	+	+	+	+	+	+
3	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	+	-	+	+	+	+	+	+	+	+	+	+	+	+
1	+	-	+	+	+	+	+	+	+	+	+	+	+	+
0														
DATE	10/16/77													

NUMBER CORRECT RESPONSES

COMMENTS: dot (·) between column "a" and column "b" indicates student answered both questions correctly

Figure 54 Type 1

Hearing Form for Step 7 (Phase III) V, IX, XI, XIII)

Student: Ralph Trainer: Steve

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

Circle appropriate phase and write in item used. Phase III: Item: ; Phase IV: ; Phase VIII: ; Phase IX: ; Phase XIII: ;

In the hearing form (Label) refers to the label appropriate to the item displayed, thus a "yes" response to the blank indicates the substitution of label which is different from the item displayed. Item requiring a "no" response.

Display Item, Ask what is THIS?	Expected Response "(Label)"	Ask, IS THIS A ...	Expected Response	
		(label)?	"yes"	
		can,	"	
		sadie,	"	
		(label)?	"	
		(label)?	"	
		hat,	"	
		(label)?	"	
		book,	"	
		raincoat	"	
		shoe,	"	
		(label)?	"	
		(label)?	"	
		(label)?	"	
		can,	"	
		book,	"	
		(label)?	"	
		(label)?	"	
		sadie,	"	
		(label)?	"	
		hat,	"	

Record response, correct or incorrect (+); incorrect, (-), changed or prompted (P); or no response (NR). For Level C only, record each trial as acceptable as a vocal response (V) or not acceptable as a vocal response (NR).

Session Summary for Session

		Nonspeech			Speech			Acceptability	
			a	b		a	b	a	b
Label 1	Score	10							
	Percent	100							
Label 2	Score	16	3	1					
	Percent	80	15	5					
Total	Score								
	Percent								

(Circled trials indicate student answered both questions correctly)

Figure 55 Type 2

Hearing Form for Step 7 (Phase III) V, IX, XI, XIII)

Student: Ralph Trainer: Steve

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

Circle appropriate phase above. Item:

a) WHAT IS THIS? L="(label)" b) IS THIS (LABEL)? Y="yes" N="no"

"(LABEL)" included in this question depends on "Y" or "N" code in the Stimulus column.

		a→b	a→b	a→b	a→b	a→b	a→b
20	L-N	± · ±	± ±	± ±	± · ±	± ±	± ±
19	L-Y	± ±	± · ±	± · ±	± · ±	± ±	± ±
18	L-Y	± · ±	± ±	± · ±	± ±	± ±	± ±
17	L-N	± · ±	± · ±	± · ±	± · ±	± ±	± ±
16	L-N	± · ±	± · ±	± ±	± · ±	± ±	± ±
15	L-Y	± · ±	± · ±	± · ±	± · ±	± ±	± ±
14	L-Y	± · ±	± · ±	± · ±	± · ±	± ±	± ±
13	L-N	± · ±	± ±	± · ±	± · ±	± ±	± ±
12	L-Y	± ±	± · ±	± · ±	± · ±	± ±	± ±
11	L-N	± · ±	± · ±	± · ±	± · ±	± ±	± ±
10	L-Y	± · ±	± · ±	± · ±	± · ±	± ±	± ±
9	L-N	± · ±	± · ±	± · ±	± · ±	± ±	± ±
8	L-Y	± · ±	± · ±	± · ±	± · ±	± ±	± ±
7	L-N	± ±	± · ±	± ±	± · ±	± ±	± ±
6	L-N	± ±	± · ±	± · ±	± · ±	± ±	± ±
5	L-N	± · ±	± · ±	± · ±	± · ±	± ±	± ±
4	L-Y	± ±	± · ±	± ±	± · ±	± ±	± ±
3	L-Y	± ±	± ±	± ±	± · ±	± ±	± ±
2	L-Y	± ±	± · ±	± ±	± ±	± ±	± ±
1	L-N	± ±	± · ±	± ±	± ±	± ±	± ±
0		X X	X X	X X	X X	X X	X X

NUMBER CORRECT / STIMULUS PRESENTATIONS

DATE	10/20/76	10/21/76	10/22/76	10/25/76		

COMMENTS: 10/22/76 Ralph had seizure 5 min. before training started

dots (·) between columns indicate student got both responses correct.

128

Figure 56

Type 1

Scoring Form for Step 7 (Phases IV and VI)

Student Ralph Date 10/26/76 Session # 14

Trainer Mike

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase and write in item used. Phase IV Ball Phase VI

On the scoring for: (item label) refers to the label appropriate to the item displayed, thus requiring a "yes" response. The blank (_____?) indicates the substitution of labels which are different from the item displayed, thus requiring a "no" response.

Display Item, ask IS THIS A	Expected Response	Score	Display Item, ask IS THIS A	Expected Response	Score
1. (label) ?	"yes"	+/-	17. (label) ?	"yes"	+/-
2. car ?	"no"	+/-	18. car ?	"no"	+/-
3. hat ?	"no"	+/-	19. (label) ?	"yes"	+/-
4. (label) ?	"yes"	+/-	20. book ?	"no"	+/-
5. (label) ?	"yes"	+/-	21. _____ ?	"yes"	+/-
6. ball ?	"no"	+/-	22. crayon ?	"no"	+/-
7. (label) ?	"yes"	+/-	23. (label) ?	"yes"	+/-
8. coat ?	"no"	+/-	24. shoe ?	"no"	+/-
9. shoe ?	"no"	+/-	25. coat ?	"no"	+/-
10. car ?	"no"	+/-	26. ball ?	"no"	+/-
11. (label) ?	"yes"	+/-	27. (label) ?	"yes"	+/-
12. (label) ?	"yes"	+/-	28. (label) ?	"yes"	+/-
13. (label) ?	"yes"	+/-	29. (label) ?	"yes"	+/-
14. crayon ?	"no"	+/-	30. hat ?	"no"	+/-
15. book ?	"no"	+/-	31. (label) ?	"yes"	+/-
16. (label) ?	"yes"	+/-	32. car ?	"no"	+/-

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech					Speech				Acceptability	
	+	/	-	S	0	+	-	S	0	+	0
Score						26	5	1			
Percent						81	16	3			

reached criterion!

Figure 57

Type 2

Scoring Form for Step 7 (Phases IV and VI)

Student Ralph Trainer

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase above.

Item:

a) IS THIS A (LABEL)? "yes" "no"

CLANG (include in the question demand as "Y" or "N" cue in the stimulus column.

20	N	+/-						S						S
19	Y	+/-												
18	N	+/-						S						S
17	Y	+/-												
16	Y	+/-												
15	Y	+/-												
14	N	+/-						S						S
13	N	+/-						S						S
12	N	+/-						S						S
11	Y	+/-												
10	N	+/-						S						S
9	Y	+/-												
8	N	+/-						S						S
7	Y	+/-												
6	N	+/-						S						S
5	Y	+/-												
4	Y	+/-												
3	N	+/-						S						S
2	N	+/-						S						S
1	Y	+/-												
0			X	X	X	X	X	X	X	X	X	X	X	X	X

NUMBER CORRECT

STIMULUS MODALITY: SPEECH / NONSPEECH

DATE

COMMENTS:

reached criterion in one session

Board Signing

Figure 58 Type I

Scoring Form for Step 7 (Phases III, IX, XI, XIII)

Student Ralph Date 12-5-76 Session # 41

Trainer Diane

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase and write in item used: Phase III _____, Phase IX _____, Phase XI _____, Phase XIII _____

On the scoring form (label) refers to the label appropriate to the item displayed, thus requiring a "yes" response; the blank (_____)? indicates the substitution of labels which are different from the item displayed, thus requiring a "no" response.

Display Item, Ask WHAT IS THIS ?	Expected Response: "(Label)"	Ask, IS THIS A ...	Reported Response	
1.	ƎƆ	(label)?	"yes"	ƎƆ
2.	ƎƆ	ball,	"no"	ƎƆ
3.	ƎƆ	book,	"no"	ƎƆ
4.	ƎƆ	(label)?	"yes"	ƎƆ
5.	ƎƆ	(label)?	"yes"	ƎƆ
6.	ƎƆ	radio,	"no"	ƎƆ
7.	ƎƆ	(label)?	"yes"	ƎƆ
8.	ƎƆ	crayon,	"no"	ƎƆ
9.	ƎƆ	candy,	"no"	ƎƆ
10.	ƎƆ	shoe,	"no"	ƎƆ
11.	ƎƆ	(label)?	"yes"	ƎƆ
12.	ƎƆ	(label)?	"yes"	ƎƆ
13.	ƎƆ	(label)?	"yes"	ƎƆ
14.	ƎƆ	coat,	"no"	ƎƆ
15.	ƎƆ	bell,	"no"	ƎƆ
16.	ƎƆ	(label)?	"yes"	ƎƆ
17.	ƎƆ	(label)?	"yes"	ƎƆ
18.	ƎƆ	rabbit,	"no"	ƎƆ
19.	ƎƆ	(label)?	"yes"	ƎƆ
20.	ƎƆ	ball,	"no"	ƎƆ

Record response components as correct (+); incorrect (-); shaped or prompted (S); or as responses (NR). For Level C only, score each trial as acceptable as a total response (+); or non acceptable as a total response (0).

Person Summary for Session

		Nonspeech		Speech		Acceptability
		. / - S		. - S		+ 0
Label	Score	20				
	Percent	100				
Yes/No	Score	14	6			
	Percent	70	30			
Total	Score	14				
	Percent	70				

(Circled trials indicate both questions were answered correctly)

Board Signing

Figure 59 Type 2

Scoring Form for Step 7 (Phase III, IX, XI, XIII)

Student Ralph Trainer Diane

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase above. Item: _____

a) WHAT IS THIS? L="(label)" b) IS THIS (LABEL)? Y="yes" N="no"

"LABEL" is listed in this narrative according to "Y" or "N" cues in the Stimulus column.

		a→b	a→b	a→b	a→b	a→b	a→b
20	L-N	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
19	L-Y	±ƎƆ · ±ƎƆ	±ƎƆ · -ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
18	L-Y	±ƎƆ · ±ƎƆ	±ƎƆ · -ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
17	L-N	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
16	L-N	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
15	L-Y	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
14	L-Y	±ƎƆ · -ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
13	L-N	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
12	L-Y	±ƎƆ · -ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
11	L-N	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
10	L-Y	±ƎƆ · -ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
9	L-N	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
8	L-Y	±ƎƆ · -ƎƆ	±ƎƆ · -ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
7	L-N	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
6	L-N	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
5	L-N	±ƎƆ · -ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
4	L-Y	±ƎƆ · ±ƎƆ	±ƎƆ · -ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
3	L-Y	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
2	L-Y	±ƎƆ · -ƎƆ	±ƎƆ · -ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
1	L-N	±ƎƆ · ±ƎƆ	±ƎƆ · ±ƎƆ	⊥ ⊥	⊥ ⊥	⊥ ⊥	⊥ ⊥
0		X X	X X	X X	X X	X X	X X

NUMBER CORRECT / STIMULATION PRESENTATION / SCORE KEEPER

DATE 12/2/76 12/5/76

COMMENTS:

Board Signing

Figure 60 — Type 1

Scoring Form for Step 7 (Phases IV and VI)

Student Ralph Date 12/8/76 Session # 44

Trainer Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Circle appropriate phase and write in item used Phase IV _____ Phase VI Easy

On the scoring for, (item label) refers to the label appropriate to the item displayed, thus requiring a "yes" response. The blank (_____?) indicates the substitution of labels which are different from the item displayed, thus requiring a "no" response.

Display item, ask IS THIS A	Expected Response	Score	Display item, ask IS THIS A	Expected Response	Score
1. (label) ?	"yes"	±✓	17. (label) ?	"yes"	±✓
2. book ?	"no"	±✓	18. sadie ?	"no"	±✓
3. ball ?	"no"	±✓	19. (label) ?	"yes"	±✓
4. (label) ?	"yes"	±✓	20. ball ?	"no"	±✓
5. (label) ?	"yes"	±✓	21. _____ ?	"yes"	±✓
6. sadie ?	"no"	±✓	22. book ?	"no"	±✓
7. (label) ?	"yes"	-✓	23. (label) ?	"yes"	✓
8. hat ?	"no"	±✓	24. ball ?	"no"	±✓
9. cup ?	"no"	±✓	25. crayon ?	"no"	±✓
10. bubbles ?	"no"	±✓	26. cup ?	"no"	±✓
11. (label) ?	"yes"	±✓	27. (label) ?	"yes"	✓
12. (label) ?	"yes"	±✓	28. (label) ?	"yes"	±✓
13. (label) ?	"yes"	±✓	29. (label) ?	"yes"	±✓
14. crayon ?	"no"	±✓	30. hat ?	"no"	✓
15. ball ?	"no"	±✓	31. (label) ?	"yes"	±✓
16. (label) ?	"yes"	-✓	33. bubbles ?	"no"	±✓

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech					Speech					Acceptability		
	+	✓	-	S	0	+	-	S	0		+	0	
Score	27												
Percent	84												

Board Signing

Figure 61 — Type 2

Scoring Form for Step 7 (Phases IV and VI)

Student Ralph Trainer Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) | Speech Alone | Nonspeech Alone

Circle appropriate phase above.

Item:

a) IS THIS A (LABEL)? Y="yes" N="no"

*LABEL included in this question depends on "Y" or "N" code in the stimulus column.

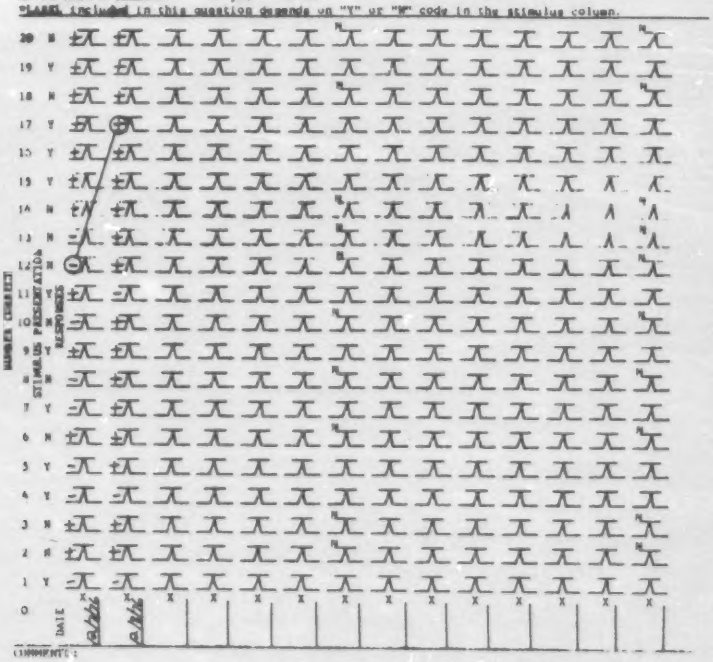


Figure 62

Type 1

Scoring Form for Step 7 (Phase VII)

Student: Ralph Date: 12/22/76 Session #: 54

Trainer: Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items used: 1) ball 2) car If the space in the third column (includes a (1) or (2), use that item label in your question to elicit a "yes" response. If there is a blank in that column, use an item label (from the skill just) other than the one shown to elicit a "no" response.

Display this item:	Ask: WHAT IS THIS? Score	Ask: IS THIS A ..	Reported Response	Score
1 (1)	✓	(1)?	"yes"	✓
(1) (2)	✓	ball?	"no"	✓
(2) (2)	✓	(2)?	"yes"	✓
(4) (1)	✓	car?	"no"	✓
(3) (1)	✓	car?	"no"	✓
(6) (2)	✓	(2)?	"yes"	✓
(7) (1)	✓	(1)?	"yes"	✓
(8) (2)	✓	(2)?	"yes"	✓
9 (2)	✓	ball?	"no"	✓
(10) (1)	✓	car?	"no"	✓
(11) (1)	✓	car?	"no"	✓
(12) (1)	✓	(1)?	"yes"	✓
(13) (2)	✓	(2)?	"yes"	✓
(14) (2)	✓	ball?	"no"	✓
(15) (1)	✓	[illegible]?	"no"	✓
(16) (2)	✓	(2)?	"yes"	✓
(17) (1)	✓	(1)?	"yes"	✓
(18) (2)	✓	ball?	"no"	✓
(19) (2)	✓	ball?	"no"	✓
(20) (1)	✓	(1)?	"yes"	✓

Record response components as correct (+); incorrect (-); shaped or prompted (S); or as no response (NR). For Level C only, score each trial as acceptable as a total response (+) or unacceptable as a total response (0).

Percent Summary for Session

		Nonspeech A	Nonspeech B	Speech A	Speech B	Accepted/Mtg
Label 1	Score	19	1			
	Percent	95	5			
Label 2	Score	19	1			
	Percent	95	5			
Total	Score	18				
	Percent	90				

(Circled totals indicate student got both responses correct)

Figure 63

Type 2

Scoring Form for Step 7 (Phase VII)

Student: Ralph Trainer: Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items: 1) ball 2) car

a) WHAT IS THIS? b) IS THIS A (LABEL)?

L: "(Label)" (Item 1) or 2) Y="yes" N="no"

"LABEL" included in this question depends on "Y" or "N" code in the Stimulus column.

		a→b	a→b	a→b	a→b	a→b	a→b
20	L1-Y	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
19	L3-N	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
18	L2-Y	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
17	L1-N	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
16	L1-N	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
15	L2-Y	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
14	L1-Y	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
13	L2-Y	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
12	L2-N	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
11	L1-N	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
10	L1-N	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
9	L1-Y	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
8	L2-Y	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
7	L2-N	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
6	L1-N	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
5	L2-Y	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
4	L1-Y	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
3	L2-N	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
2	L2-N	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
1	L1-Y	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
#		1 2	1 2	1 2	1 2	1 2	1 2
	DATE	12/22/76					

NUMBER CORRECT / NUMBER OF RESPONSES

COMMENTS: Dots between columns indicate student responded correctly to both questions.

Board Signing

Figure 64

Type 1

Scoring Form for Step 7 (Phase VIII)

Student Ralph Date 12/27/76 Session # 56

Trainer Steve

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items Used: 1) ball 2) car

Display this Item	Ask. IS THIS A ...	Expected Response	Score	Display this Item	Ask. IS THIS A ...	Expected Response	Score
1. (1)	(1)?	"yes"	+/-	17. (1)	(1)?	"yes"	+
2. (2)	ball?	"no"	-	18. (2)	ball?	"no"	+
3. (2)	(2)?	"yes"	+	19. (2)	ball?	"no"	+
4. (1)	car?	"no"	+	20. (1)	(1)?	"yes"	+
5. (1)	car?	"no"	+	21. (1)	car?	"no"	+
6. (2)	(2)?	"yes"	-	22. (2)	(2)?	"yes"	+
7. (1)	(1)?	"yes"	+	23. (2)	ball?	"no"	-
8. (2)	(2)?	"yes"	+	24. (1)	(1)?	"yes"	+
9. (2)	ball?	"no"	+	25. (1)	(1)?	"yes"	+
10. (1)	car?	"no"	+	26. (1)	car?	"no"	+
11. (1)	car?	"no"	+	27. (2)	ball?	"no"	+
12. (1)	(1)?	"yes"	-	28. (2)	(2)?	"yes"	+
13. (2)	(2)?	"yes"	+	29. (1)	car?	"no"	+
14. (2)	ball?	"no"	+	30. (2)	ball?	"no"	+
15. (1)	car?	"no"	+	31. (1)	(1)?	"yes"	-
16. (2)	(2)?	"yes"	-	32. (2)	(2)?	"yes"	+

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech +	Nonspeech S	Nonspeech 0	Speech +	Speech S	Speech 0	Acceptability +	Acceptability -
Score	25	6	1					
Percent	78	19	3					

Board Signing

Figure 65

Type 2

Scoring Form for Step 7 (Phase VIII)

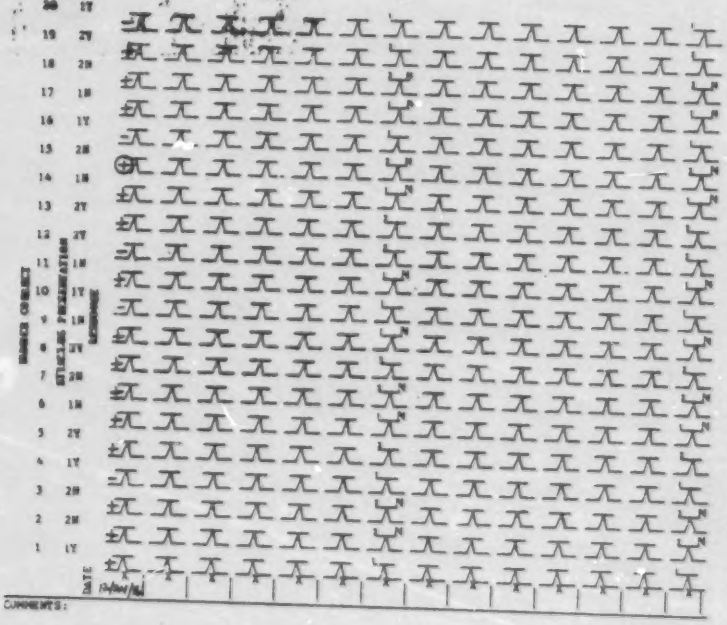
Student Ralph Trainer Steve

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items: 1) ball 2) car

a) IS THIS A (ball/car)? or "What is it?"

Blank (exclusive of this question) denotes an "X" or "E" code in the stimulus column.



COMMENTS:

Figure 66

Type I

Board Signing

Scoring Form for Step 7 (Phases III, V, XI, XIII)

Student Ralph Date 12/30/76 Session # 59

Trainer Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: Speech Plus Nonspeech Speech Alone Nonspeech Alone

Circle appropriate phase above and write in item used: Phase III _____; Phase V _____

(Phase XI) Labels _____; Phase XI _____; Phase XIII _____

The 1AO scoring form (label) refers to the label appropriate to the item displayed, thus requiring a "yes" response; the blank (_____) indicates the substitution of labels which are different from the item displayed, thus requiring a "no" response.

Display Item, Ask what IS THIS ?	Expected Response "(Label)"	Ask, IS THIS A ...	Expected Response
1.	ΣΓ	(label)?	yes	ΣΓ
2.	ΣΓ	ball,	yes	ΣΓ
3.	ΣΓ	car,	yes	ΣΓ
4.	ΣΓ	(label)?	yes	ΣΓ
5.	ΣΓ	(label)?	yes	ΣΓ
6.	ΣΓ	trayfee,	yes	ΣΓ
7.	ΣΓ	(label)?	yes	ΣΓ
8.	ΣΓ	sodie,	yes	ΣΓ
9.	ΣΓ	ball,	yes	ΣΓ
10.	ΣΓ	car,	yes	ΣΓ
11.	ΣΓ	(label)?	yes	ΣΓ
12.	ΣΓ	(label)?	yes	ΣΓ
13.	ΣΓ	(label)?	yes	ΣΓ
14.	ΣΓ	ball,	yes	ΣΓ
15.	ΣΓ	car,	yes	ΣΓ
16.	ΣΓ	(label)?	yes	ΣΓ
17.	ΣΓ	(label)?	yes	ΣΓ
18.	ΣΓ	trayfee,	yes	ΣΓ
19.	ΣΓ	(label)?	yes	ΣΓ
20.	ΣΓ	ball,	yes	ΣΓ

Record response assistance as correct (+); incorrect (-); dropped or prompted (DP); or no response (NR). For Level C only, score each trial as acceptable as a total response (AR) or not acceptable as a total response NR.

Percent Summary for Session

		Nonspeech		Speech		Nonspeech/Alone	
		+	-	+	-	+	-
Label ( )	Score	20					
	Percent	100					
Yes/No	Score	19					
	Percent	90					
Total	Score	19					
	Percent	90					

(Circled trials indicate student responded correctly to both questions)

Figure 67

Type 2

Board Signing

Scoring Form for Step 7 (Phase III, V, XI, XIII)

Student Ralph Trainer Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: Speech Plus Nonspeech Speech Alone Nonspeech Alone

Circle appropriate phase above. Item: _____

a) WHAT IS THIS? L="(label)" b) IS THIS (LABEL)?* Y="yes" N="no"

*CODE (included in this question depends on "Y" or "N" code in the Stimulus column.

		a→b	a→b	a→b	a→b	a→b	a→b
20	L-N	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
19	L-Y	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
18	L-Y	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
17	L-N	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
16	L-N	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
15	L-Y	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
14	L-Y	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
13	L-N	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
12	L-Y	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
11	L-N	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
10	L-Y	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
9	L-N	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
8	L-Y	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
7	L-N	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
6	L-N	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
5	L-N	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
4	L-Y	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
3	L-Y	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
2	L-Y	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
1	L-N	ΣΓ-ΣΓ	Γ Γ	Γ Γ	Γ Γ	Γ Γ	Γ Γ
0							

MINUTE CORRECT / ESTIMATION PRESENTATION / RESPONSES

DATE 12/30/76

COMMENTS: Dot between columns indicated that student responded correctly to both questions

Board Signing

Figure 60 — Type 1

Scoring Form for Step 7 (Phase X)

Student Ralph Date 11/3/77 Session # 60

Trainer Julie

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Test Items Used: 1) ball 2) car 3) book

Display this Item S	Ask, IS THIS A	Expected Response	Score	Display this Item	Ask, IS THIS A	Expected Response	Score
1 (2)	(2)?	"yes"	-Λ	19. (1)	book ?	"no"	+Λ
2 (1)	(1)?	"yes"	+Λ	20. (2)	(2)?	"yes"	-Λ
3 (3)	car ?	"no"	+Λ	21. (2)	ball ?	"no"	+Λ
4 (3)	(3)?	"yes"	-Λ	22. (1)	(1)?	"yes"	+Λ
5 (2)	ball ?	"no"	+Λ	23. (3)	car ?	"no"	+Λ
6 (1)	book ?	"no"	+Λ	24. (1)	(1)?	"yes"	-Λ
7 (3)	(3)?	"yes"	-Λ	25. (3)	(3)?	"yes"	+Λ
8 (2)	book ?	"no"	+Λ	26. (2)	(2)?	"yes"	+Λ
9 (2)	(2)?	"yes"	-Λ	27. (3)	car ?	"no"	+Λ
10 (3)	car ?	"no"	+Λ	28. (1)	book ?	"no"	+Λ
11 (1)	(1)?	"yes"	+Λ	29. (3)	(3)?	"yes"	-Λ
12 (1)	book ?	"no"	+Λ	30. (2)	book ?	"no"	+Λ
13 (2)	ball ?	"no"	+Λ	31. (3)	ball ?	"no"	+Λ
14 (3)	(3)?	"yes"	-Λ	32. (1)	(1)?	"yes"	+Λ
15 (1)	car ?	"no"	+Λ	33. (2)	book ?	"no"	+Λ
16 (1)	ball ?	"no"	+Λ	34. (2)	(2)?	"yes"	+Λ
17 (2)	(2)?	"yes"	-Λ	35. (1)	car ?	"no"	+Λ
18 (1)	(1)?	"yes"	+Λ	36. (3)	(3)?	"yes"	-Λ

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech 0	Speech +	Speech -	Speech S	Speech 0	Acceptable	Unacceptable
Score	26		10							
Percent	72		28							

Board Signing

Figure 60 — Type 2

Scoring Form for Step 7 (Phase X)

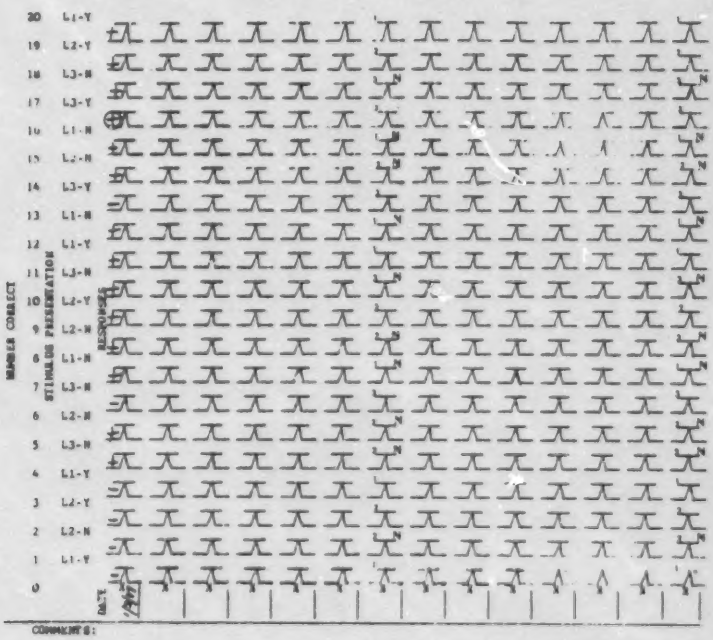
Student Ralph Trainer Julie

Circle Speech Level: S B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items: 1) ball 2) car 3) book

a: IS THIS A (LABEL)?* Y="yes" N="no"

*LABEL included in this question depends on "Y" or "N" code in the stimulus column.



COMMENTS:

Figure 70 Type 1

Board Signing

Scoring Form for Step 7 (Phases III, V, IX, XIII)

Student Ralph Date 1-6-77 Session # 63

Trainer Julie

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase and write in item words: Phase III _____; Phase V _____; Phase IX (Phase XIII) _____; Phase XIII _____

Under the scoring form (Label) refer to the label appropriate to the item displayed, thus resulting a "yes" responses; the blank (_____)? indicates the substitution of labels which are different from the item displayed, thus resulting a "no" response.

Display Item, And What is THIS ?	Expected Response: "(Label)"	Ask, IS THIS A ...	Expected Response
(1.)	(label)?	"yes"	
(2.)	ball,	"no"	
(3.)	car,	"no"	
(4.)	(label)?	"yes"	
(5.)	(label)?	"yes"	
(6.)	radio,	"no"	
(7.)	(label)?	"yes"	
(8.)	hat,	"no"	
(9.)	book,	"no"	
(10.)	bubbles	"no"	
(11.)	(label)?	"yes"	
(12.)	(label)?	"yes"	
13.	(label)?	"yes"	
14.	car,	"no"	
15.	ball,	"no"	
16.	(label)?	"yes"	
17.	(label)?	"yes"	
18.	coat,	"no"	
19.	(label)?	"yes"	
20	bell,	"no"	

Desired response: ✓ corresponds to correct (+), incorrect (-) skipped or prompted (0), or no response (NR). For Level C only, every pack trial is acceptable as a total response (✓) is not acceptable as a total response (0).

Percent Summary for Session

		Nonspeech	Speech	Nonspeech Alone
Label ?	Score	20/20		
	Percent	100		
Yes/No	Score	20/20		
	Percent	100		
Total	Score	40/40		
	Percent	100		

(Circled trials indicate student answered both questions correctly)

Figure 71 Type 2

Board Signing

Scoring Form for Step 7 (Phase I:1,V,IX,XIII)

Student Ralph Trainer Julie

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase above. Item: _____

a) WHAT IS THIS? L="(label)" b) IS THIS (LABEL)?* Y="yes" N="no"

*LABEL inserted in this question depends on "Y" or "N" code in the Stimulus column.

		a→b	a→b	a→b	a→b	a→b	a→b
20	L-N					N	
19	L-Y						
18	L-Y						
17	L-N					N	
16	L-N					N	
15	L-Y						
14	L-Y						
13	L-N					N	
12	L-Y						
11	L-N					N	
10	L-Y						
9	L-N					N	
8	L-Y						
7	L-N					N	
6	L-N					N	
5	L-N					N	
4	L-Y						
3	L-Y						
2	L-Y						
1	L-N					N	
0		X	X	X	X	X	X

DATE 1/6/77

STIMULATION PRESENTATION ORDER CORRECT RESPONSES

COMMENTS: Dot between columns indicates student answered both questions correctly.

Type 1

Board Signature

Figure 73
Scoring Form for Step 7 (Phases XII and XIV)

Student Ralph Date 1/10/77 Session # 66

Trainer Julie

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Item words: 1) ball ; 2) car ; 3) book ; 4) crayon

Circle phase (XII or XIV)

Display this item:	Ask, IS THIS A ...	Expected Response	(Score)	Display this item:	Ask IS THIS A ...	Expected Response	(Score)
1. (3)	(3) ?	"yes"	±/-	17. (2)	(2) ?	"yes"	±/-
2. (1)	(1) ?	"yes"	±/-	18. (3)	ball?	"no"	±/-
3. (4)	book?	"no"	±/-	19. (1)	(1) ?	"yes"	±/-
4. (2)	ball?	"no"	±/-	20. (2)	ball?	"no"	±/-
5. (2)	(2) ?	"yes"	±/-	21. (4)	(4) ?	"yes"	±/-
6. (4)	book?	"no"	±/-	22. (3)	(3) ?	"yes"	±/-
7. (3)	(3) ?	"yes"	±/-	23. (1)	car?	"no"	±/-
8. (3)	crayon?	"no"	-/-	24. (4)	book?	"no"	±/-
9. (1)	car?	"no"	±/-	25. (2)	(2) ?	"yes"	±/-
10. (4)	(4) ?	"yes"	±/-	26. (3)	car?	"no"	±/-
11. (4)	car?	"no"	±/-	27. (1)	(1) ?	"yes"	±/-
12. (2)	(2) ?	"yes"	±/-	28. (2)	ball?	"no"	-/-
13. (1)	(1) ?	"yes"	±/-	29. (1)	crayon?	"no"	±/-
14. (1)	book?	"no"	-/-	30. (4)	(4) ?	"yes"	±/-
15. (3)	crayon?	"no"	±/-	31. (3)	(3) ?	"yes"	±/-
16. (4)	book?	"no"	±/-	32. (4)	(4) ?	"yes"	±/-

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech 0	Speech +	Speech -	Speech S	Speech 0	Acceptability +	Acceptability 0
Score	29		4							
Percent	88		12							

Type 2

Board Signature

Figure 73
Scoring Form for Step 7 (Phases XII and XIV)

Student Ralph Trainer Julie

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items: 1) ball 2) car 3) book 4) crayon

a) IS THIS A (LABEL)?* Y="yes" N="no"

*LABEL included in this question depends on "Y" or "N" code in the stimulus column.

20	3-Y	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
19	1-N	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
18	2-Y	-/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
17	4-N	±/-	⊕/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
16	2-Y	-/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
15	4-Y	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
14	1-N	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
13	2-N	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
12	3-Y	⊖/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
11	4-N	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
10	1-Y	-/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
9	3-N	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
8	2-N	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
7	4-Y	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
6	3-Y	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
5	1-Y	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
4	1-N	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
3	3-N	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
2	4-Y	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
1	2-N	±/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
0		-/-	±/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
		1	2	3	4	5	6	7	8	9	10	11	12	13
		1-Y	1-N	2-Y	2-N	3-Y	3-N	4-Y	4-N	1-Y	1-N	2-Y	2-N	3-Y

Comments: 1/10/77 - reached criterion

Figure 74 Type 1

Scoring Form for Step 7 (Phase III, V, IX, XI III)

Student Ralph Trainer Julie

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase above. Items: _____

a) WHAT IS THIS? L="(label)" b) IS THIS (LABEL)? Y="yes" N="no"

CLARIFICATION included in this question depends on "Y" or "N" code in the Stimulus column.

	Display Item, And WHAT IS THIS?	Expected Response "(Label)"	And, IS THIS A ...	Expected Response
1.	ƎL	(label)?	"yes"	ƎL
2.	ƎL	ball?	"no"	ƎL
(3)	ƎL	hot?	"no"	ƎL
(4)	ƎL	(label)?	"yes"	ƎL
(5)	ƎL	(label)?	"yes"	ƎL
(6)	ƎL	sharpen?	"no"	ƎL
(7)	ƎL	(label)?	"yes"	ƎL
8.	ƎL	sandy?	"no"	ƎL
(9)	ƎL	book?	"no"	ƎL
(10)	ƎL	rake?	"no"	ƎL
(11)	ƎL	(label)?	"yes"	ƎL
(12)	ƎL	(label)?	"yes"	ƎL
(13)	ƎL	(label)?	"yes"	ƎL
(14)	ƎL	bell?	"no"	ƎL
(15)	ƎL	root?	"no"	ƎL
(16)	ƎL	(label)?	"yes"	ƎL
(17)	ƎL	(label)?	"yes"	ƎL
18.	ƎL	shoe?	"no"	ƎL
(19)	ƎL	(label)?	"yes"	ƎL
(20)	ƎL	ball?	"no"	ƎL

Scored response components as correct (+); incorrect (-); shaped or prompted (S); or as response (NR). For Level C only, score each trial as acceptable as a total response (+) or non acceptable as a total response (-).

Percent Summary for Session

		Nonspeech a	Nonspeech b	Speech a	Speech b	Acceptability a	Acceptability b
Label ( )	Score	18	1 1				
	Percent	90	5 5				
Yes/No	Score	18	2				
	Percent	90	10				
Total	Score	16					
	Percent	80					

(Circled trials indicate student answered both questions correctly)

Figure 73 Type 2

Scoring Form for Step 7 (Phase III, V, IX, XI III)

Student Ralph Trainer Julie

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Circle appropriate phase above. Items: _____

a) WHAT IS THIS? L="(label)" b) IS THIS (LABEL)? Y="yes" N="no"

CLARIFICATION included in this question depends on "Y" or "N" code in the Stimulus column.

		a→b	a→b	a→b	a→b	a→b	a→b
20	L-N	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
19	L-Y	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
18	L-Y	ƎL-⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
17	L-N	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
16	L-N	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
15	L-Y	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
14	L-Y	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
13	L-N	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
12	L-Y	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
11	L-N	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
10	L-Y	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
9	L-N	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
8	L-Y	ƎL-⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
7	L-N	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
6	L-N	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
5	L-N	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
4	L-Y	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
3	L-Y	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
2	L-Y	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
1	L-N	ƎL-ƎL	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃	⅃ ⅃
0		A X	X X	X X	X X	X X	X X

NUMBER CORRECT STIMULATING PRESENTATIONS RESPONSES

DATE 1/12/77

COMMENTS: Dot between columns indicates student answered both questions correctly.

worked with student at 9:00 instead of 2:30

Board Signing

Figure 76

Type 1

Scoring Form for Step 7 (Phases XII and XIV)

Student: Ralph Date: 1/24/77 Session #: 75

Trainer: Steve

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items used: 1) car ; 2) book ; 3) crayon ; 4) radio

Circle phase All or XIV

Display this item:	Ask, IS THIS A ...	Expected Response	(Score)	Display this item:	Ask IS THIS A ...	Expected Response	(Score)
1. (3)	(3) ?	"yes"	±✓	17. (2)	(2) ?	"yes"	±✓
2. (1)	(1) ?	"yes"	±✓	18. (3)	car ?	"no"	±✓
3. (4)	crayon ?	"no"	±✓	19. (1)	(1) ?	"yes"	±✓
4. (2)	car ?	"no"	±✓	20. (2)	crayon ?	"no"	±✓
5. (1)	(1) ?	"yes"	±✓	21. (4)	(4) ?	"yes"	±✓
6. (4)	book ?	"no"	±✓	22. (1)	(1) ?	"yes"	±✓
7. (3)	(3) ?	"yes"	±✓	23. (3)	radio ?	"no"	±✓
8. (3)	radio ?	"no"	±✓	24. (4)	book ?	"no"	±✓
9. (1)	radio ?	"no"	±✓	25. (2)	(2) ?	"yes"	±✓
10. (4)	(4) ?	"yes"	±✓	26. (3)	car ?	"no"	±✓
11. (1)	crayon ?	"no"	-✓	27. (1)	(1) ?	"yes"	±✓
12. (2)	(2) ?	"yes"	±✓	28. (2)	crayon ?	"no"	±✓
13. (1)	(1) ?	"yes"	±✓	29. (1)	radio ?	"no"	±✓
14. (3)	book ?	"no"	±✓	30. (4)	(4) ?	"yes"	±✓
15. (3)	car ?	"no"	±✓	31. (3)	(3) ?	"yes"	±✓
16. (2)	radio ?	"no"	±✓	32. (4)	(4) ?	"yes"	±✓

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech 0	Speech +	Speech -	Speech S	Speech 0	Acceptability +	Acceptability 0
Score	30		2							
Percent	94		6							

Board Signing

Figure 77

Type 4

Scoring Form for Step 7 (Phases XII and XIV)

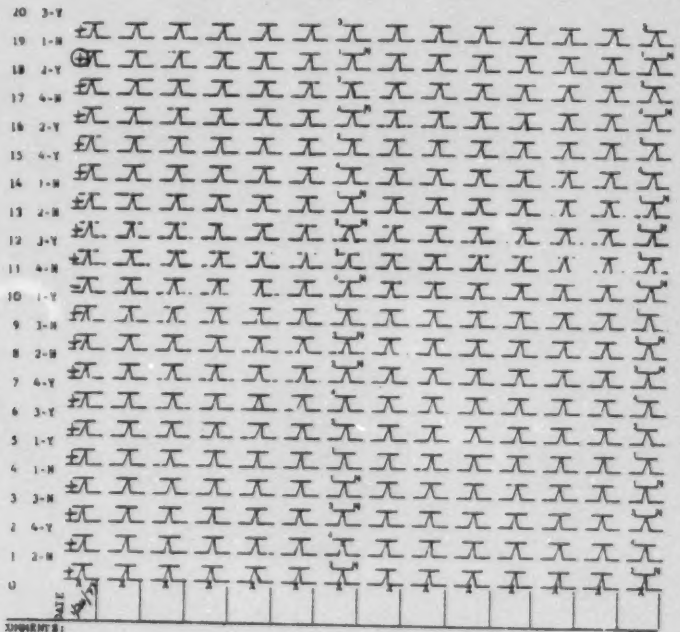
Student: Ralph Trainer: Steve

Circle Speech Level: A B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items: 1) car 2) book 3) crayon 4) radio

a) IS THIS A (LABEL)? Y="yes" N="no"

*LABEL included in this question depends on "Y" or "N" code in the stimulus column.



COMMENTS:

1/24/77 Ralph's mother said that his seizure medication had been decreased this morning.

Figure 78

Manual Signing

Summary Form for Step 7

Speech Level: A Trainer's Stimulus: speech + board 1/3

Student: Ralph Trainer: Steve

Date Training Started: 10/4/76 Date Training Ended: 11/2/77 Total Sessions to Criterion: 76

Percent Correct Responses Across Sessions

Phase "yes"/"no"	Session # 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	Speech Approximations
I	44 67 56 78 91	
II	83 69 88	
III	75 70 80 80	
IV	91	
V	50 50	
VI		
VII		
VIII		
IX		
X		
XI		
XII		
XIII		
XIV		
Skill Test		
Date	10/4 10/5 10/6 10/7 10/8 10/11 10/12 10/13 10/14 10/15 10/18 10/19 10/20 10/21 10/22 10/25 10/26 10/27 10/28 10/29 11/1 11/2	

(Circled percentages represent criterion based on 13 consecutive correct responses.)

Figure 78

Manual Signing

Summary Form for Step 7

Speech Level: A Trainer's Stimulus: speech + board 2/3

Student: Ralph Trainer:

Date Training Started: Date Training Ended: Total Sessions to Criterion:

Percent Correct Responses Across Sessions

Phase "yes"/"no"	Session # 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56	Speech Approximations
I	77 91	
II	83	
III	75 80 86	
IV	75 91	
V	45 30 15 45 70 80	
VI	42 89	
VII	30 60	
VIII	75	
IX		
X		
XI		
XII		
XIII		
XIV		
Skill Test	31	
Date	10/29 11/1 11/2 11/3 11/4 11/5 11/8 11/9 11/10 11/11 11/12 11/15 11/16 11/17 11/18 11/19 11/22 11/23 11/24 11/25 11/26 11/29 11/30 12/1 12/2 12/3	

(Circled percentages represent criterion based on 13 consecutive correct responses.)

Figure 78

Manual Signing

Summary Form for Step 7

Speech Level: A Trainer's Stimulus: speech + board 3/3

Student: Ralph Trainer: Steve

Date Training Started: Date Training Ended: Total Sessions to Criterion:

Percent Correct Responses Across Sessions

Phase "yes"/"no"	Session # 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76	Speech Approximations
I		
II		
III		
IV		
V		
VI		
VII		
VIII	91	
IX	80	
X	72 78	
XI	88	
XII	62 78	
XIII	80 80	
XIV	71 71 74	
Skill Test	38	
Date	12/6 12/7 12/8 12/9 12/10 12/13 12/14 12/15 12/16 12/17 12/20 12/21 12/22 12/23 12/27 12/28 12/29 12/30 1/3 1/4	

(Circled percentages represent criterion based on 13 consecutive correct responses.)

STEP 8

(Requesting Items with the Pronoun "I")

GENERAL INSTRUCTIONS

Training Goal

To train the student to use a three-word response, including the pronoun "I," when requesting items. The response is taught using both symbolized and nonsymbolized items. This Step is further training in the control dimension (i.e., saying things which direct another person to do something).

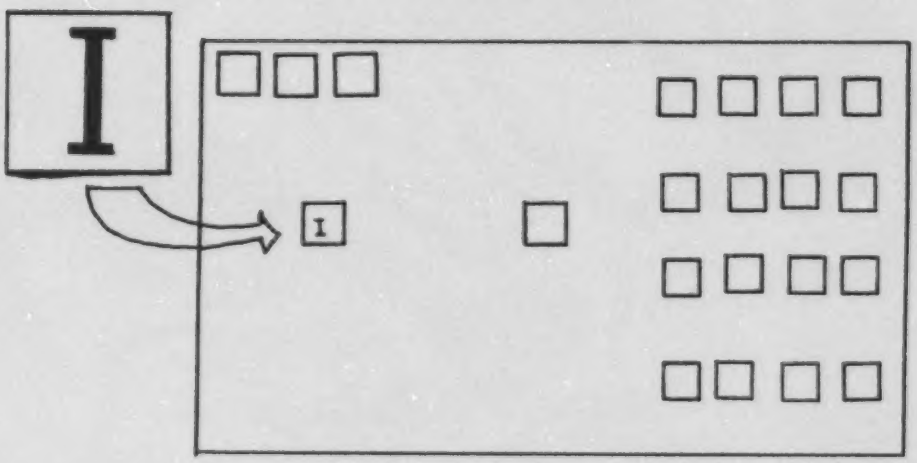
Training Items

Ten items (foods, drinks, toys, etc.) that are especially liked by the student. It is most important that the student actually does want the items presented in the training and that the student can label the symbolized objects.

Student's Communication Board Display

One new symbol is added to the student's board for this Step. The "I" symbol is placed in the center of the left-hand portion of the board.

Figure 79: Student's Board for Step 8



Trainer's Board for Step 8

Figure 81 indicates the symbols used for Step 8 training on the trainer's board.

Procedures

Use the Total Communication Levels. Criterion remains the same. Figure 82 presents the training order for Step 8.

SPECIFIC TRAINING INSTRUCTIONS

STEP 8a: TRAINER USES SPEECH AND BOARD

Phase I

1. Hold up each item, one at a time, and ask WHAT DO YOU WANT? A correct response must include the pronoun, "I," the verb "want," and either the correct label (for symbolized items) or correctly pointing to the object (for nonsymbolized items).

2. Give the student the item for correct responses. If the item is non-consumable, let the student play with it before asking that it be given back for use in further trials. When you ask that the item be returned, extend your hand and say I WANT THE (ITEM).

3. Partial responses by the student are common to this Step. Most typically the student will omit the pronoun "I" when making a request. When partial responses are given, you should emphasize the missing component when making the correction. Examples of typical trials using the Level B procedures are shown in Table 22 and are keyed to Figures 83 and 84.

4. Present the ten items three times each in a session as indicated on the Type 1 forms. Present the items twice if you are using the Type 2 forms.

5. Record percent correct responses on the scoring form, Type 1. Circle the number correct for Type 2 forms.

6. Complete the Summary Form for Step 8 at the end of each session (see Figure 87).

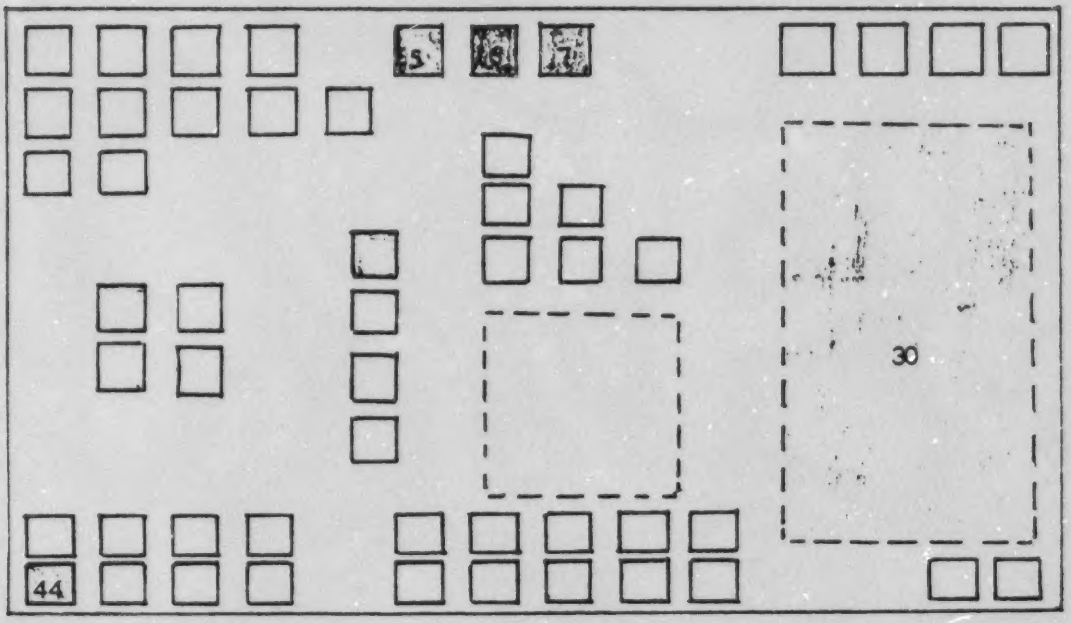
7. Continue training until criterion performance is reached (80 percent or 12 consecutive correct nonspeech responses in a session). Advance the student on to Step 8, Phase II when criterion is met, and initiate generalization training for Step 8 as described later.

Phase II

1. Place all 10 items at once in full view of the student. Call the student's attention to the variety of items. Being careful to not look directly at

Figure 81

Trainer's Board for Step 8*



5 correct
6 good
7 wrong
22 want
26 I
30 (nouns)
40 what

* See Figure 4 for full discription of the Trainer's Symbols.

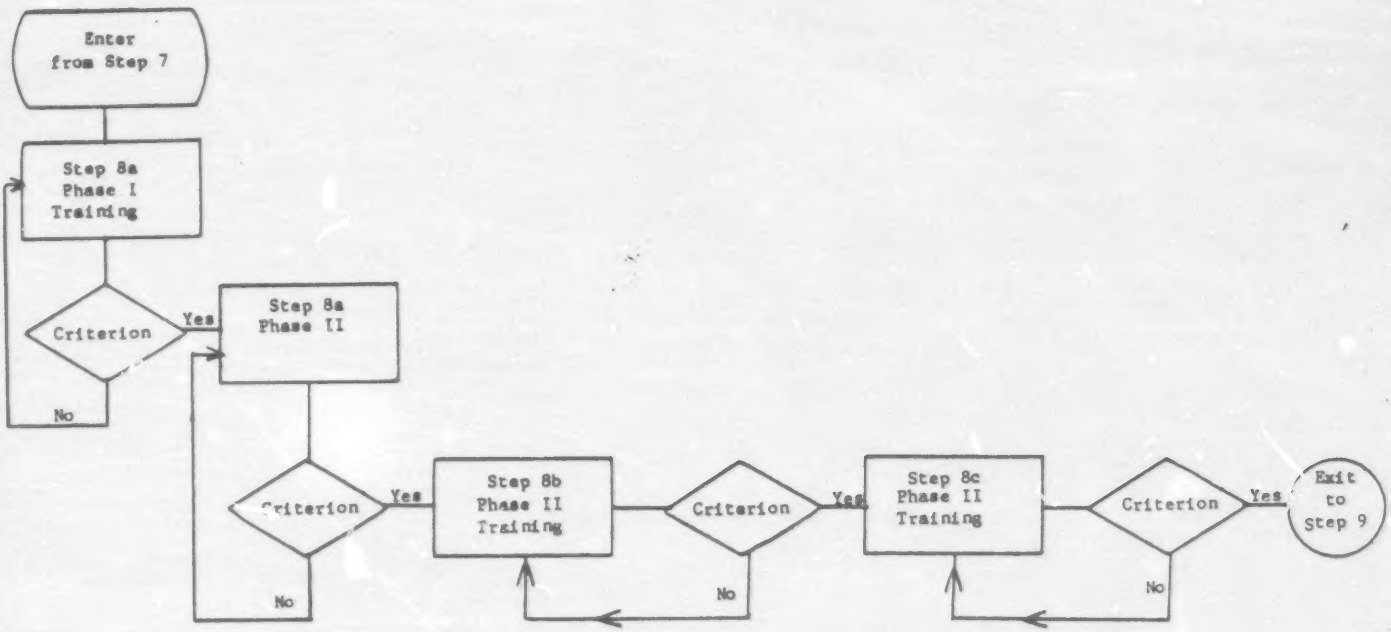


Figure 82: Order of Training for Step 8 of the Communication Board Program

Table 22

Example Trials* for Step 8a (Phase I)
Level B Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Type 1 Trial 1 Type 2 Trial 3	
(Holds up brush.) what do you want / WHAT DO YOU WANT?	I want brush / AH UH BUH
good / GOOD! YOU CAN HAVE THE BRUSH (Gives brush to student. Scores [+/S] on Scoring Form.)	
Type 1 Trial 2 Type 2 Trial 9	
(Holds up cracker.) what do you want / WHAT DO YOU WANT?	(points to cracker)
wrong / WRONG. YOU HAVE TO SAY "I WANT CRACKER" (Points to I symbol and want symbol on student's board and then to the cracker. Scores [-/Q] on Scoring Form.) LET'S TRY AGAIN.	
what do you want / WHAT DO YOU WANT?	I want (points to cracker) / AH BUH KA KA
better / MUCH BETTER. (Gives student a small piece of cracker.)	
Type 1 Trial 5 Type 2 Trial 12	
(Holds up potato chip.) what do you want / WHAT DO YOU WANT?	I want (points to chip) / AH UH UH
good / GOOD FOR YOU! (Gives student the chip. Scores [+/S] on Scoring Form.)	

*Example trials for this Table correspond to those with astericks (*) in session 12 of the Example Scoring Forms, Figures 83 and 84.

Award

Figure 83
Scoring Form for Step 8 (Phase 1)

Type 1

Student Ann Date 4/12/77 Session # 12

Trainer Julie

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items Used
Symbolized: 1) brush 2) water 3) milk 4) cookie 5) radio
Nonsymbolized: 6) crackers 7) chip 8) powder 9) phone 10) ice cream

Present this item Ask, WHAT DO YOU WANT?	Expected Response	Score	Present this item Ask, WHAT DO YOU WANT?	Expected Response	Score
1. (1)	+"I want (label)"	+/-	16. (3)	"I want (label)"	+/-
2. (6)	+"I want" object	+/-	17. (8)	"I want" object	+/-
3. (3)	"I want (label)	+/-	18. (9)	"I want" object	+/-
4. (4)	"I want (label)	+/-	19. (7)	"I want" object	+/-
5. (7)	+"I want" object	+/-	20. (4)	"I want (label)"	+/-
6. (5)	"I want (label)	+/-	21. (5)	"I want (label)"	+/-
7. (8)	"I want" object	+/-	22. (6)	"I want" object	+/-
8. (9)	"I want" object	+/-	23. (5)	"I want (label)"	+/-
9. (2)	"I want (label)	+/-	24. (2)	"I want (label)"	+/-
10. (10)	"I want" object	+/-	25. (9)	"I want" object	+/-
11. (6)	"I want" object	+/-	26. (10)	"I want" object	+/-
12. (7)	"I want" object	+/-	27. (3)	"I want (label)	+/-
13. (1)	"I want (label)	+/-	28. (1)	"I want (label)	+/-
14. (8)	"I want" object	+/-	29. (4)	"I want (label)	+/-
15. (2)	"I want (label)	+/-	30. (10)	"I want" object	+/-

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech +	+	-	S	0	Speech +	-	S	0
Score	25		5					28	2
Percent	83		17					93	7

Award

Figure 84
Scoring Form for Step 8 (Phase 1)

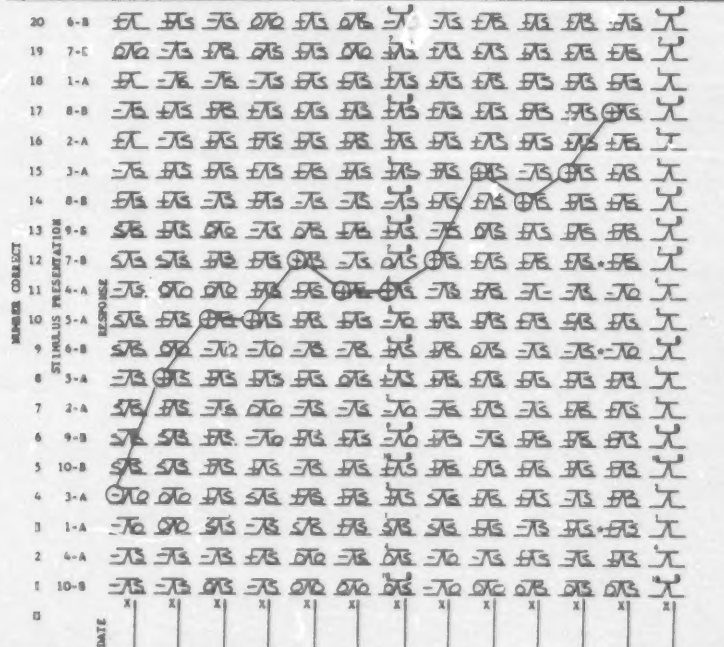
Type 2

Student Ann Trainer Julie

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Spe... Alone Nonspeech Alone

Symbolized items: 1) brush 2) water 3) milk 4) cookie 5) radio
Nonsymbolized items: 6) crackers 7) chip 8) powder 9) phone 10) ice cream

A: WHAT WANT? A: "I want (label)" B: "I want" object



COMMENTS:
says "eh" for I and "eh" for want.

4/12/77-reached criterion

or to touch any items, ask WHAT WANT? The student may ask for any of the 10 items. The responses are considered correct if they meet the standards described in Phase I. Some students may need prompting to respond initially. Although the trainer may encourage other selections, the student may ask for and receive the same item any number of times.

2. If the item requested was consumable, replace the item in the display. If the item was non-consumable, request it back after the student has played with it for a short time. When all 10 items are displayed again, repeat the procedure.

3. Continue the procedure until all trials on the scoring form used are completed or until criterion is reached.

   Table 23 shows example trials for Phase II and is keyed to Figures 85 and 86.

4. Tally, compute and record responses on the scoring forms and summary forms. Continue training until criterion is reached.

STEPS 8b and 8c: TRAINER USES SPEECH AND BOARD ALONE

Steps 8b and 8c are taught using procedures like those described for Steps earlier. Like Step 6, only Phase II of Step 8 is used for "b" and "c" training.

PROGRAMMING FOR GENERALIZATION

Refer to procedures for generalization as described for Steps 4 and 5; asking "what want" for symbolized and nonsymbolized items respectively. The procedures in Steps 4 and 5 may be followed exactly as written with one addition. The student should be encouraged to include "I" in his/her response; e.g., "I want ball."

Table 23

Example Trials* for Step 8a (Phase II)
Level B Student
Communication Board

Trainer board / SPEECH	Student board / SPEECH
Type 1 Trial 1 Type 2 Trial 1	
(Displays items in front of student.) LOOK AT ALL THESE THINGS (Points to items.) YOU CAN PICK WHICH ONE YOU WANT.	
what do you want / WHAT DO YOU WANT?	I want cookie / AH UH KUH KUH
OKAY! YOU CAN HAVE IT!	(picks up cookie)
(Scores [+/S] on Scoring Form.)	
Type 1 Trial 2 Type 2 Trial 2	
LOOK AT ALL THESE THINGS. (Points to items.)	
what do you want / WHAT DO YOU WANT?	I want (points to ice cream) / AH UH UH UH
good / GOOD! HERE YOU GO! (Gives student a bite of ice cream.	
Scores [+/S] on Scoring Form.)	

*Example trials for this Table correspond to those with astericks (*) on the Example Step 8 Phase II Scoring Forms, Figures 85 and 86.

LAH

Board

Figure 85
Scoring Form for Step 8 (Phase II)

Type 1

Student Ann Date 4/14/79 Session # 21

Trainer Steve

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items Displayed
Symbolized: 1) brush 2) water 3) milk 4) cookies 5) radio
Nonsymbolized: 6) crackers 7) chip 8) powder 9) phone 10) ice cream

Display all items Ask, WHAT DO YOU WANT?	Expected Response "I want (label)" "I want" object (Score)	Display all items Ask, WHAT DO YOU WANT?	Expected Response "I want (label)", or "I want" object (Score)
1.	±AS	16.	A
2.	±AS	17.	A
3.	±AS	18.	A
4.	±AS	19.	A
5.	±AS	20.	A
6.	±AS	21.	A
7.	±AS	22.	A
8.	±AS	23.	A
9.	±AS	24.	A
10.	±AS	25.	A
11.	±AS	26.	A
12.	±AS	27.	A
13.	A	28.	A
14.	A	29.	A
15.	A	30.	A

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech 0	Speech +	Speech -	Speech S	Speech 0
Score	12/12				10/10			
Percent	100				100			

Board

Figure 86
Scoring Form for Step 8 (Phase II)

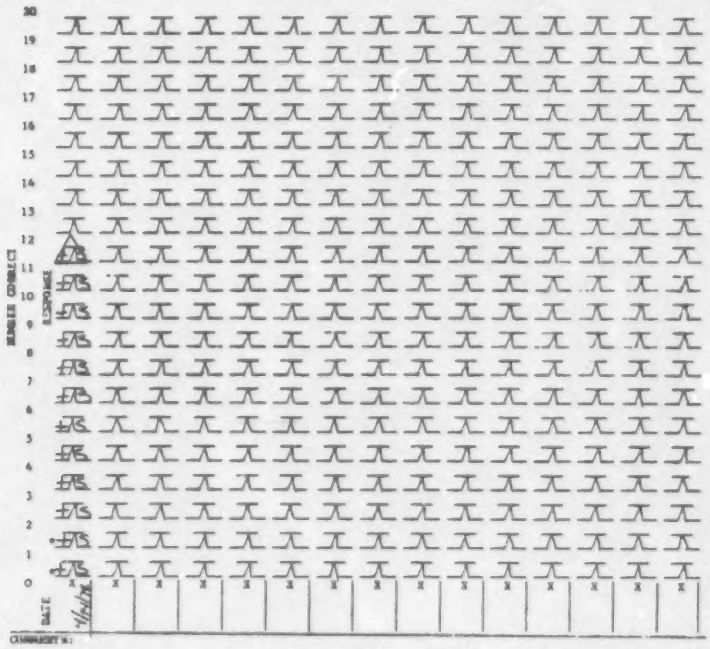
Type 2

Student Ann Trainer Steve

Circle Speech Level: A (B) C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Items Displayed
Symbolized: 1) brush 2) water 3) milk 4) cookies 5) radio
Nonsymbolized: 6) crackers 7) chip 8) powder 9) phone 10) ice cream

A1 WHAT WANT? A or B "I want (label)" or "I want" object



Board

Figure 87
Summary Form for Step 8

Speech Level: B Trainer's Stimulus speech + board

Student Ann Trainer Julie

Date Training Started 3/28/77 Date Training Ended: 4/14/77 Total Sessions to Criterion: 13

Percent Correct Responses Across Sessions

"I want" "(label)"/object

Session #

Phase	1	2	3	4	5	6	7	8	9	10	11	12											Speech Approximations
I	23	40	50	50	57	53	53	60	77	70	77	83											say "ah" for "I" and "uh" for "want."
II												(100)											
Date	3/28	3/29	3/30	3/31	4/1	4/4	4/6	4/6	4/7	4/8	4/11	4/14											

Session #

Phase																							Speech Approximations
I																							
II																							
Date																							

(Circled percentages represent criterion based on 12 consecutive correct responses.)

STEP 9

(Naming and Requesting Items)

GENERAL INSTRUCTIONS

Training Goal

To combine (chain together) two previously learned responses, i.e., labeling items and requesting the same items. Again, both symbolized and nonsymbolized items are used. This Step is concerned with integration. The student must learn to discriminate between two questions (i.e., WHAT IS THAT? and WHAT DO YOU WANT?), and answer with the appropriate responses which were taught in prior, and separate, Steps.

Training Items

Five items the student has learned to label on his/her board, and five items which are not symbolized on the board. All ten items must be potentially reinforcing to the student.

Board Display

Both the student's and the trainer's board remain as with Step 8.

Procedures

Use the Total Communication Levels. Criterion remains as with earlier Steps. In Phase II of Step 9 criterion is based on both answers of the chain being correct. Figure 88 presents the training order for Step 9.

SPECIFIC TRAINING INSTRUCTIONS

STEP 9a: TRAINER USES SPEECH AND BOARD

For the student to be successful in this Step, it is important that he or she first be able to make a discrimination between the two questions, WHAT IS THAT? and WHAT DO YOU WANT? Accordingly, Step 9 has two phases. In Phase I the student must demonstrate the ability to discriminate between the two questions by responding appropriately. In Phase II the two responses are chained together.

Phase I

1. Select five items for training; three symbolized, two nonsymbolized. Present each item randomly, and on separate trials. On one-half the trials, hold up the item and ask, WHAT IS THAT? For correct responses, the student must give the appropriate item label (e.g., point to the symbol car) or use the no card symbol. On the remaining trials, hold up the item and ask, WHAT DO YOU WANT? The correct response to this

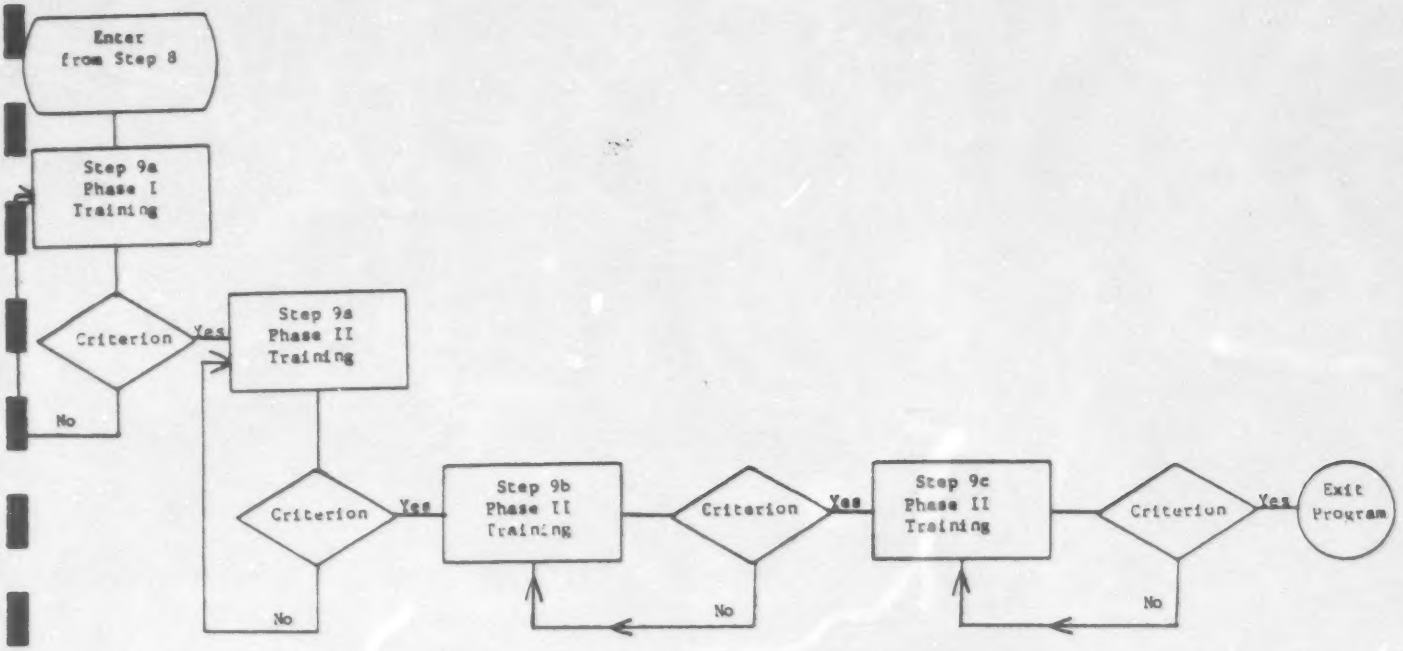


Figure 88: Order of Training for Step 9 of the Communication Board Program

question is the pronoun "I," the verb "want," and either pointing to the label or the object depending on whether the object was symbolized or not. The student should be given the time for a correct response, as in Step 8. If the item is non-consumable, allow the student to play with it for a while before requesting that the item be returned. When requesting the item back, extend your hand and say I WANT THE (ITEM).

2. Use the Scoring Form for Step 9 (Phase I) presented in Figures 89 and 90. Refer to the Percent Conversion Table for 30-trial Session in Appendix A for determining percent scores for the session if Type 1 forms are used.

3. Enter total percent correct in the Summary Form for Step 9 in Figure 93. Continue training until criterion performance is achieved, then advance the student to Phase II of Step 9.

Phase II

1. Openly display 10 items so the student can examine them visually. Five items are symbolized, five items are not. The items can be placed in a box, on a table, on shelves, or on the floor. The training setting should be fairly unstructured, with room for the student to move about and examine the items.

2. Point to the items, one at a time, and ask WHAT IS THAT? For correct responses the student must provide the correct symbol (e.g., "drum") or "no card." You then confirm the student's response (e.g., YES, THAT IS A DRUM), and follow with the second question, WHAT DO YOU WANT? The student must now ask for the item using the pronoun "I," the verb, "want," and the appropriate item symbol (e.g., "I want drum") or pointing to the object. The item is given to the student for a correct response as before.

3. Corrections and prompts should follow each separate response in the chain if needed. If the student does not respond or incorrectly responds to the first question (WHAT IS THAT?) go to the next trial without presenting the second question (WHAT DO YOU WANT?). The second question can be presented, however, if the student responds appropriately to the first question following the correction procedure.

   If the student makes an error or does not respond to the second question (WHAT DO YOU WANT?), it is not necessary to re-present the first question (WHAT IS THAT?) before using the correction procedure.

4. Use the Scoring Form for Step 9 (Phase II) presented in Figures 91 and 92. Score trials separately for labeling responses and requesting responses. Criterion, however, is based only on those trials in which both responses are correct in the same trial (i.e., the student must first label the item correctly and make the appropriate request for the same item). These are indicated by the circles around the trial numbers in the Scoring Form for Step 9. Scores for those trials in which both responses are correct in the same trial are entered at the bottom of the Type 1 scoring form. The Percent Conversion Table for 30-trial Session

153

Figure 89
Scoring Form for Step 9 (Phase 1)

Board _____ Type 1

Student Ralph Date 5/10/77 Session # 21

Trainer Julie

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

List items used:
Symbolized 1) radio 2) pop 3) crayon
Nonsymbolized 4) nut 5) harmonica

Present this item	Ask	Expected Response	Score	Present this item	Ask	Expected Response	Score
1.(2)	WHAT IS THAT? "(label)"		+/-	16.(2)	WHAT DO YOU WANT? "I want (label)"		+/-
2.(5)	WHAT DO YOU WANT? "I want" object		+/-	17.(4)	WHAT IS THAT? "no card"		+/-
3.(1)	WHAT DO YOU WANT? "I want (label)"		+/-	18.(1)	WHAT DO YOU WANT? "I want (label)"		+/-
4.(3)	WHAT IS THAT? "(label)"		+/-	19.(3)	WHAT IS THAT? "(label)"		+/-
5.(5)	WHAT IS THAT? "no card"		+/-	20.(2)	WHAT IS THAT? "(label)"		+/-
6.(2)	WHAT DO YOU WANT? "I want (label)"		+/-	21.(1)	WHAT IS THAT? "(label)"		+/-
7.(4)	WHAT IS THAT? "no card"		+/-	22.(5)	WHAT IS THAT? "no card"		+/-
8.(3)	WHAT DO YOU WANT? "I want (label)"		+/-	23.(3)	WHAT DO YOU WANT? "I want (label)"		+/-
9.(5)	WHAT DO YOU WANT? "I want" object		+/-	24.(5)	WHAT DO YOU WANT? "I want" object		+/-
10.(1)	WHAT IS THAT? "(label)"		+/-	25.(1)	WHAT DO YOU WANT? "I want (label)"		+/-
11.(4)	WHAT DO YOU WANT? "I want" object		+/-	26.(3)	WHAT IS THAT? "(label)"		+/-
12.(2)	WHAT IS THAT? "(label)"		+/-	27.(4)	WHAT DO YOU WANT? "I want" object		+/-
13.(1)	WHAT IS THAT? "(label)"		+/-	28.(2)	WHAT DO YOU WANT? "I want (label)"		+/-
14.(3)	WHAT DO YOU WANT? "I want (label)"		+/-	29.(5)	WHAT IS THAT? "no card"		+/-
15.(4)	WHAT IS THAT? "no card"		+/-	30.(4)	WHAT DO YOU WANT? "I want" object		+/-

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech +	+	-	S	0
Score	25		4	0	1
Percent	83		13		3

	Speech +	-	S	0

Figure 90
Scoring Form for Step 9 (Phase 1)

Board _____ Type 2

Student Ralph Trainer Julie

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Symbolized items: 1) radio 2) pop 3) Crayon
Nonsymbolized items: 4) nut 5) harmonica
a: WHAT IS THAT? "(label)" or point to "no card"
b: WHAT DO YOU WANT? "I want (label)" or "I want" object

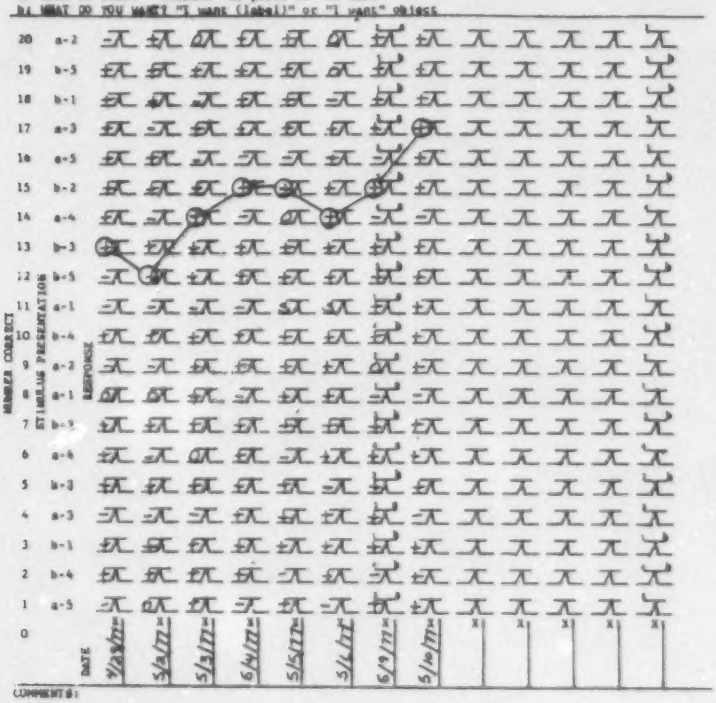


Figure 91

Type 1

Board

Scoring Form for Step 9 (Phase II)

Student: Ralph Date: 5/11/77 Session # 22

Trainer: Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Symbolized Items: 1) radio 2) pop 3) book 4) crayon 5) candy

Nonsymbolized Items: 6) suit 7) chip 8) paint 9) harmonica 10) gum

Presentation Item Num. (Not in Seq.)	Trainer Presents	Resp.	Sub. Shd If You Wait	Expected Response	Score
1. (1)	"(label)"	✓		"I want (label)"	✓
2. (2)	"(label)"	✓		"I want (label)"	✓
(3) 6)	"no card"	✓		"I want" object	✓
(4) 3)	"(label)"	✓		"I want (label)"	✓
(5) 7)	"no card"	✓		"I want" object	✓
(6) 8)	"no card"	✓		"I want" object	✓
(7) 4)	"(label)"	✓		"I want (label)"	✓
(8) 9)	"no card"	✓		"I want" object	✓
(9) 5)	"(label)"	✓		"I want (label)"	✓
10. (10)	"no card"	✓		"I want" object	✓
(1) 6)	"no card"	✓		"I want" object	✓
(11) 1)	"(label)"	✓		"I want (label)"	✓
(12) 7)	"no card"	✓		"I want" object	✓
(13) 8)	"no card"	✓		"I want (label)"	✓
13. (3)	"(label)"	✓		"I want (label)"	✓
(14) 2)	"(label)"	✓		"I want (label)"	✓
(15) 4)	"(label)"	✓		"I want (label)"	✓
(16) 9)	"no card"	✓		"I want" object	✓
(17) 10)	"no card"	✓		"I want" object	✓
(18) 5)	"(label)"	✓		"I want (label)"	✓

Record response components as correct (+), incorrect (-), skipped or prompted (0), or no response (NR). For Level C only, score each trial as acceptable or a total response (+), or not acceptable or a total response (0).

Percent Summary for Session

		Nonspeech +	Nonspeech -	Nonspeech 0	Nonspeech 0	Speech +	Speech -	Speech 0	Speech 0
"(label)" / "no card"	Score	19	1						
	Percent	95	5						
"I want" "(label)"/object Request	Score	17	3						
	Percent	85	15						
Total	Score	16							
	Percent	80							

*Remember that criterion performance is based upon both responses in the choice being correct or acceptable-, i.e., the student must first label the item correctly and make the appropriate request for the same item.

(Circled trials indicate student answered both questions correctly)

Figure 92
Scoring Form for Step 9 (Phase II)

Type 2

Board

Student: Ralph Trainer: Steve

Circle Speech Level: (A) B C Circle Trainer's Stimulus: (Speech Plus Nonspeech) Speech Alone Nonspeech Alone

Symbolized Items: 1) radio 2) pop 3) book 4) crayon 5) candy

Nonsymbolized Items: 6) suit 7) chip 8) paint 9) harmonica 10) gum

a: WHAT IS THAT? "(label)"/"no card" b. WHAT DO YOU WANT? "I want" "(label)"/object

Number Correct	Stimulus Presentation	Response	a→b	a→b	a→b	a→b	a→b	a→b	a→b	a→b	a→b	a→b
20	1		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
19	2		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
18	6		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
17	3		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
16	7		✓⊙✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
15	8		✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
14	4		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
13	9		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
12	5		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
11	10		✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
10	9		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
9	1		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
8	7		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
7	8		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
6	2		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
5	3		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
4	4		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
3	9		✓·✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
2	10		✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
1	5		✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
0												
	DATE		5/11/77									

COMMENTS: dot (·) between columns indicates student answered both questions correctly

(Appendix A) is used for this Step. For Type 2 Scoring Forms, tally the number of correct responses and circle on the "b" column.

5. Enter Total percent correct on the Summary Form for Step 9 shown in Figure 93. Train to criterion and then initiate Step 9b and 9c, and begin programming for generalization as described below.

STEPS 9b and 9c: TRAINER USES SPEECH AND SIGN ALONE

Steps 9b and 9c are taught as described in Phase II of Step 9a with the stimulus conditions used singly.

Note: At this point the student is ready to begin training on Part II of the program which pertains to actions with persons and things. Currently, no adaptations of the original speech program exist for Part II. The trainer is encouraged to attempt such adaptations on his/her own initiative.

PROGRAMMING FOR GENERALIZATION

Combine the procedures as described for Steps 1 and 3; asking "WHAT WANT?" for symbolized and nonsymbolized items, respectively, to obtain a two-response chain. Present items the student likes and ask "WHAT IS THAT?" When the student correctly labels the item then ask "WHAT DO YOU WANT?", give the item to the student for correct responses that include the complete sentence, "I want _____."

For example: when the symbolized item cookie is presented and the student is asked "WHAT'S THAT?" he/she would point to the symbol for cookie on his/her board. The parent, etc., would reinforce that response and then ask "WHAT DO YOU WANT?" The correct response would be "I want cookie." The cookie should then be given to the student.

When nonsymbolized items are presented, (for instance, sandwich) the parent asks "WHAT'S THAT?" and the student should point to no card on his/her board. This response would be reinforced and the label provided. The parent, etc., would then ask WHAT DO YOU WANT?" The correct response would be "I want" and pointing to the sandwich. The sandwich would then be given to the student.

Refer to Table 11 for functional examples of generalization across persons, places, and cues.

Board

Figure 93

Summary Form for Step 9

Speech Level: A Trainer's Stimulus: speech + board

Student Ralph Trainer

Date Training Started 4/12/77 Date Training Ended: 5/11/77 Total Sessions to Criterion 21

Percent Correct Responses Across Sessions

Session #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			Speech Approximations
Phase I Total	17	20	17	33	47	50	53	47	53	57	63	60	63	67	63			
Phase II Total																		
Date	4/12/77	4/13/77	4/14/77	4/15/77	4/18	4/19	4/20	4/21	4/22	4/25	4/26	4/27	4/28	4/29	5/2			

Session #	16	17	18	19	20	21	22											Speech Approximations
Phase I Total	73	77	77	73	77	83												
Phase II Total							80											
Date	5/3/77	5/4	5/5	5/6	5/9	5/10	5/11											

(Circled percentages represent criterion based on 12 consecutive correct responses.)

APPENDIX A

Percent Conversion Tables

Percent Conversion Tables for 12-, 20-, 30-, 32-, 36-, 40- and 64- Trial Sessions

The following tables are presented to assist you in rapidly and accurately identifying scores in training sessions which include total trials not given in Appendix B of the original manual.

1. Find the percent conversion table which has the total number of trials for the Skill Test or training session.
2. Identify in the left hand column the score (number) for each response category, i.e., correct (+); incorrect (-); shape (S); no-response (NR); or unintelligible (0). In some cases total scores will be identified, as explained in the instruction section for some steps.
3. Locate the percent for each response category directly beside the score and enter on the Skill Test Scoring Form or the Training Session Scoring Form.
4. Remember that the conversion tables are applicable only for total trial sessions and generally cannot be used for sessions in which the 12 correct (intelligible) responses in a row criterion was met. In the latter case percents must be computed by hand. This formula is score, divided by trials, multiplied by 100.

PERCENT CONVERSION TABLE FOR 12-TRIAL SESSION

Score	Percent	
1	0	
2	8	
3	25	
4	33	
5	42	
6	50	
7	58	
8	67	
9	75	
- - - - - -	- - - - -	Criterion
10	83	
11	92	
12	100	

PERCENT CONVERSION TABLE FOR 20-TRIAL SESSION

Score	Percent	Score	Percent
1	5	11	55
2	10	12	60
3	15	13	65
4	20	14	70
5	25	15	75
6	30	16	80
7	35	17	85
8	40	18	90
9	45	19	95
10	50	20	100

- Criterion

PERCENT CONVERSION TABLE FOR 30-TRIAL SESSION

Score	Percent	Score	Percent
1	3	16	53
2	7	17	57
3	10	18	60
4	13	19	63
5	17	20	67
6	20	21	70
7	23	22	73
8	27	23	77
		- - - - - - -	- - - - - Criterion
9	30	24	80
10	33	25	83
11	37	26	87
12	40	27	90
13	43	28	93
14	47	29	97
15	50	30	100

PERCENT CONVERSION TABLE FOR 32-TRIAL SESSION

Score	Percent	Score	Percent
1	3	17	53
2	6	18	56
3	9	19	59
4	12	20	62
5	16	21	66
6	19	22	69
7	22	23	72
8	25	24	75
9	28	25	78
		- - - - - - - - - - - - Criterion	
10	31	26	81
11	34	27	84
12	38	28	88
13	41	29	91
14	44	30	94
15	47	31	97
16	50	32	100

PERCENT CONVERSION TABLE FOR 36-TRIAL SESSION

Score	Percent	Score	Percent
1	3	19	53
2	5	20	56
3	8	21	58
4	11	22	61
5	14	23	64
6	17	24	67
7	19	25	69
8	22	26	72
9	25	27	75
10	28	28	78
		- - - - - - -	- - - - - Criterion
11	31	29	80
12	33	30	83
13	36	31	86
14	39	32	89
15	42	33	92
16	44	34	94
17	47	35	97
18	50	36	100

PERCENT CONVERSION TABLE FOR 40-TRIAL SESSION

Score	Percent	Score	Percent
1	3	21	53
2	55	22	55
3	8	23	58
4	10	24	60
5	13	25	63
6	15	26	65
7	18	272	68
8	20	28	70
9	23	29	73
10	25	30	75
11	28	31	78
12	30	32	80 Criterion
13	33	33	83
14	35	34	85
15	38	35	88
16	40	36	90
17	43	37	93
18	45	38	95
19	48	39	98
20	50	40	100

PERCENT CONVERSION TABLE FOR 64-TRIAL SESSION

Score	Percent	Score	Percent	Score	Percent	Score	Percent
1	2	17	26	33	52	49	77
2	3	18	28	34	53	50	78
3	5	19	30	35	55	51	79
4	6	20	31	36	56	- - - 52	- - -Criterion 81
5	8	21	33	37	58	53	83
6	9	22	34	38	59	54	84
7	11	23	36	39	61	55	86
8	12	24	38	40	62	56	88
9	14	25	39	41	64	57	89
10	16	26	41	42	66	58	91
11	17	27	42	43	67	59	92
12	19	28	44	44	69	60	94
13	20	29	45	45	70	61	95
14	22	30	47	46	72	62	97
15	23	31	48	47	73	63	98
16	25	32	50	48	75	64	100

APPENDIX B: SUGGESTIONS FOR GRAPHING DATA FOR THIS PROGRAM

Graphs of your student's progress in this program will be important aides to you as you evaluate the success of the training, and determine necessary changes. The original program from which this manual is adapted (Functional Speech and Language Training for the Severely Handicapped, Part 1) includes an appendix (pages 88-93) which will assist you in graphing the data if this is a new experience. However, graphs for the board program need to include the three parts of each step. A graph for parts of Step 1 of the board program might look like Figure . Notice that different graph symbols are used to show the training data from the three parts of the Step; i.e., speech and sign, speech alone, and board alone. If these data indicated training of a Level A student, the only (+) pointing scores would be graphed. For Level B students, graph only (+) pointing scores, omitting all (*) scores.

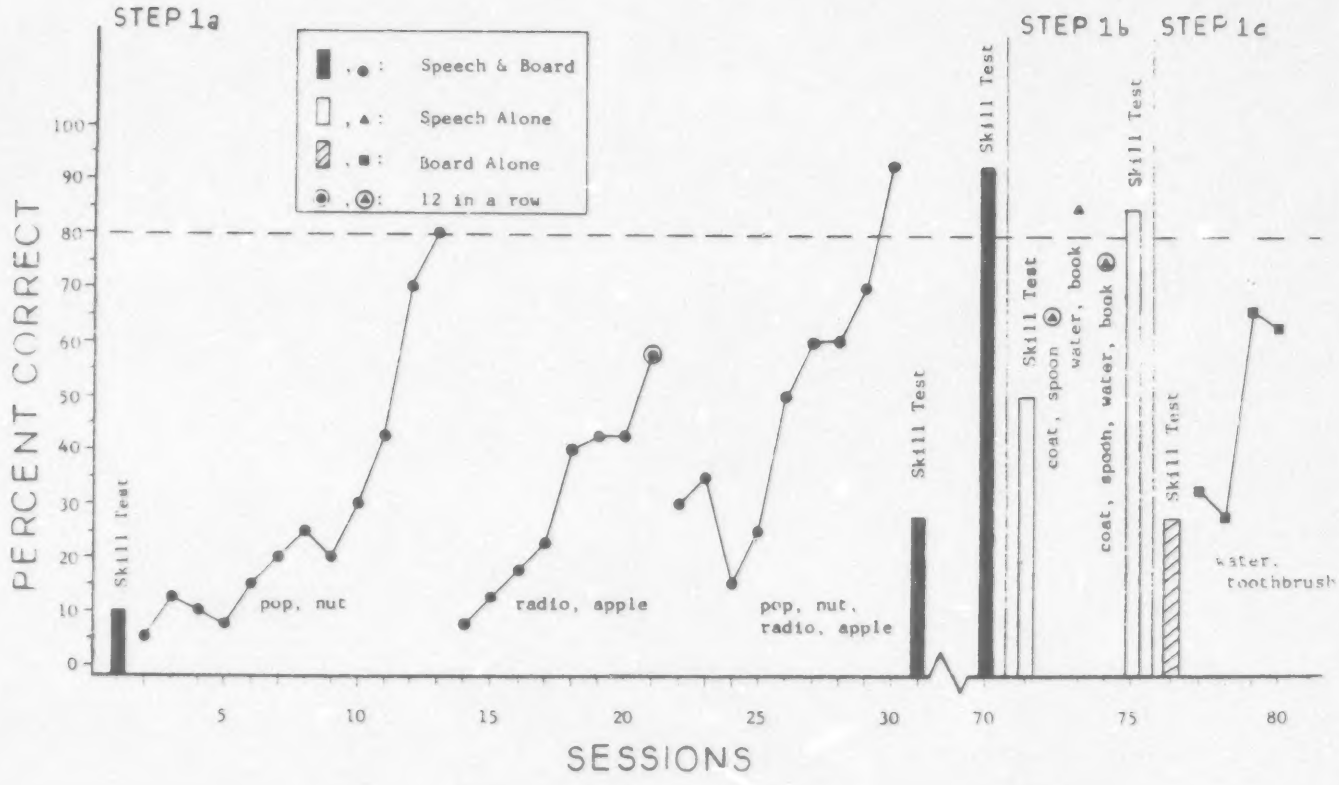


Figure 1B: Example Graph for Step 1 Indicating Some of the First and Final Sessions' Data

APPENDIX C

Handout to accompany the Total Communication Project's training video tape entitled:

A CHOICE WITH SEVERELY MULTIPLY HANDICAPPED:
BASIC COMMUNICATION BOARDS

Total tape viewing time: 40 minutes

The communication board system discussed on this tape is used with the Functional Communication Board Training program available from:

Lois Waldo
Kansas Neurological Institute
3107 West 21st Street
Topeka, Kansas
66604

This communication board program was adapted from a program entitled: Functional Speech and Language Training for the Severely Handicapped written by Doug Guess, Wayne Sailor, and Donald Baer, and available from:

H & H Enterprises
Box 3342
Lawrence, Kansas
66044

Communication boards are used by students who need a system to communicate, but have poor speech and poor hand and finger control.

KINDS OF COMMUNICATION BOARDS

A good resource book for identifying electronic boards is:

Non-Vocal Communication Resource Book, edited by Gregg Vanderheiden, and available from:

University Park Press
233 East Redwood Street
Baltimore, Maryland
21202

SLOT FILLER BOARD AND SYMBOLS

Any communication board should have a system which governs how that board is constructed and used.

This program uses a board which allows the student to point directly to the desired symbol. A simple sentence may be constructed by pointing from the left to the right of the board.

Graphic systems available:

1. Printed words -- this system is usually too difficult to use with severely retarded students.

2. Photographs -- these symbols are usually homemade and may be cut from magazines, etc.

3. Drawings -- these symbols are frequently hand drawn.

4. Rebus from the Peabody Reading Program -- taken from the Standard Rebus Glossary by Clark, Davies, and Woodcock, and available through American Guidance Series, Inc.
   Publishers Building
   Circle Pines, Minnesota
   55-14

5. Blissymbolics -- described in the Handbook of Blissymbolics by Silverman, McNaughton, and Kates and available from Blissymbolics Communication Foundation, 862 Eglinton Avenue, East, Toronto, Ontario, Canada M4G 2L1.

Select the symbol system which is suited to each student's cognitive skills.

Combining symbol systems is often preferable to using one system exclusively on any one student's board.

CONSTRUCTION OF BOARDS

Materials needed to make a board for this program generally include: illustration board, flannel cloth, white glue, clear vinyl, and masking tape.

Steps to making a board like that used in this program:

1. Cut flannel
2. Glue flannel to illustration board
3. Cut vinyl
4. Sew vinyl, leaving flap
5. Tape symbol cards onto board
6. Slip board into vinyl
7. Tape flap shut

SELECTING SYMBOL SIZE AND PLACEMENT

Variables to consider when selecting symbol placement:

1. Beware of "lost" areas in visual fields.

2. Avoid placing symbols on outside margins of the board if the student's arm movements are impaired.

3. Discrimination may be facilitated by placing symbols further apart on the boards.

Variables to consider when selecting symbol size:

1. Assess the student's visual acuity by having the student match progressively smaller pictures. An optimal size for symbol cards in this program is 1" inch by 1" inch.

2. Assess the student's motor skills by measuring how quickly the student can point, how steady the student can hold the point, and which part of the hand was used to point. Have the student point to progressively smaller symbol cards.

Facilitate pointing by:

1. Adding pegs below or above the symbol cards.
2. Adding horizontal blocks below or above the symbol cards.
3. Using holes below or above the symbol cards.
4. Adjusting the angle of the board.

VOCABULARY

For this communication board program, the student's boards need symbol cards for:

1. Sixteen object labels
2. yes
3. no
4. want
5. I
6. "no card"

The teacher's boards need the following symbol cards:

1. All of the symbol cards on each student's board.
2. Correction vocabulary
3. Instruction vocabulary

BOARD AVAILABILITY

It is very important that students using communication boards have their boards with them nearly all day long.

Suggestions for board portability:

1. Attach the board permanently to the student's wheelchair lap tray.

2. Have several boards placed in strategic areas in the student's environment.
3. Hinge and attach handles to make the board easy to carry.

TEACHING BOARD USAGE

Students need to be taught to use the board to express their wants and needs to others.

Symbol cards should be taught like spoken words, i.e., teach them to both use and understand the symbol cards.

This program teaches the students to:

1. Use symbol cards to label objects.
2. Understand the spoken word and the symbol card for the object labels.
3. Use "no card" to mean "I don't have that symbol."
4. Request objects symbolized on their board using two and three word sentences.
5. Request objects not symbolized on their board.
6. Answer "yes/no" to simple questions.

This program requires the teacher to use a board during training, just as the student does. This teaches the students the function of the symbol cards, and provides them with a model to follow for using their boards.

APPENDIX D

Handout to accompany the Total Communication Project's training video tape entitled:

A CHOICE WITH SEVERELY MULTIPLY HANDICAPPED:
BEHAVIORAL TECHNIQUES WITH NONSPEECH TRAINING

Total tape viewing time: 30 minutes

The behavioral techniques discussed on this tape may be used with the Functional Communication Board Training or the Functional Sign Training programs available from:

Lois Waldo
Kansas Neurological Institute
3107 West 21st Street
Topeka, Kansas
66604

These programs were adapted from a program entitled Functional Speech and Language Training for the Severely Handicapped written by Doug Guess, Wayne Sailor, and Donald Baer, and available from:

H & H Enterprises
Box 3342
Lawrence, Kansas
66044

The behavioral techniques discussed in this tape present each training trial as a set of antecedent events followed by responses and concluded by the application of a consequence.

ANTECEDENT EVENTS

These events are any behaviors or circumstances which occur before the student is expected to respond.

Important antecedent events include the student's attending behaviors and the trainer's stimulus presentation.

During nonspeech training it is very important for the students to have their hands quiet before each trial.

The trainer's stimulus presentation is the question or instruction which cues the student that you want a response.

Present the stimuli in a normal voice loudness, pitch and rate.

Present the stimuli only once, then give the student a chance to respond

RESPONSES

These are student's behaviors which occur after the trainer's stimulus.

Students may give perfect responses, partial responses, wrong responses, or they may not respond at all.

The type of response the student gives will determine the type of consequence the trainer will use.

CONSEQUENCES

Consequences are applied after a student's response.

Consequences may increase a good response, improve partial responses, or decrease incorrect responses.

Increase correct or partial responses by delivering reinforcers.

A reinforcer is any event which, when given immediately after a response, increases the probability that the response will occur again.

Improve partial responses by "shaping" the behavior.

Shaping is the procedure of reinforcing partially correct responses which are better than those used in the past.

Elicit new behaviors by "prompting" the response.

Prompting involves providing the students with extra cues, temporarily, to help them initiate a behavior.

Prompts should never be used without an active attempt to fade them as quickly as possible.

Decrease incorrect responses by using some type of correction procedure.

The correction procedure used in this program involves showing the students the correct response or helping them through the correct response and then immediately giving them a chance to use the corrected response.

PITFALLS

Avoid providing too many prompts before giving the student a chance to respond.

Avoid providing inadvertent visual cues.

Always give reinforcement immediately following an acceptable response.

Be careful to ignore inappropriate behaviors during training.

TROUBLE SHOOTING

Rely on your training data and graphs to provide you with information for pin-pointing problems in your training.

Decreasing or plateaued graphs of correct responding indicate something needs to be changed in training.

Some common problems are: poor attending, weak reinforcer, illness, or drowsiness.

Handout to accompany the Total Communication Project training video tape entitled

A CHOICE WITH SEVERELY MULTIPLY HANDICAPPED
TEACHING SPEECH WITH COMMUNICATION BOARDS AND SIGNING

Total Viewing Time: 40 minutes

The procedures presented on this tape may be used with the programs entitled Functional Communication Board Training and Functional Sign Training Available from Lois Waldo, Kansas Neurological Institute, 3107 West 21st Street, Topeka, Kansas 66604.

These programs were adapted from the Functional Speech and Language Training program, written by Doug Guess, Wayne Sailor, and Donald Baer, and available from H & H Enterprises, Box 3342 , Lawrence, Kansas 66044.

The purpose of this tape is to teach the viewer to use a particular recording and contingency system with the students who have limited speech and are signing or using a board.

"TOTAL COMMUNICATION"

When communication attempts emphasize added visual, auditory, and tactile cues, this is known as "total communication".

LEVELS OF SPEECH SKILLS FOR VOCALLY LIMITED STUDENTS:

Level A: Those who rarely, if ever, vocalize.

Level B: Those who make sounds but tend to use syllables, not words.

Level C: Those who try to talk in words but who are very difficult to understand.

DECIDING PLACEMENT OF THE STUDENTS IN THE LEVELS:

Observe the student interacting in several environments.
Talk to persons familiar with the student.
Determine if the student ever vocalizes spontaneously.
Determine how frequent and varied the vocalizations are.
Consider the student's age.
Consider the student's hearing acuity.

GUIDELINES ON WHICH THE SYSTEM IS BASED:

Any kind of vocalizations are to be encouraged even if they don't aid the intelligibility of the response. For a student in Level B, a vocalization may signal to a listener that a communication attempt is being made. This is the main function of speech at this level.

All responses in the Levels are reinforced as a unit. This is especially important in Level C, where the response is scored correct or incorrect depending on the combination of speech plus the accompanying sign or point.

DATA COLLECTION

For data collection purposes, a special scoring grid is used. One grid is used for recording the scores for each trial. The bottom left area of the grid (see below) is used to record the nonspeech response (NS). The bottom right area of the grid is used to record the speech response accompanying the nonspeech response (S). The upper portion of the grid is used to record the responses's acceptability as a total unit (A).

Scoring Grid:

LEVEL A: RARELY VOCALIZES

In this level, the training goal is to establish functional communication with only the nonspeech mode, that is, either with signing or a communication board.

The correct nonspeech responses are the only ones counted toward criterion for the language goals.

Correct nonspeech responses receive a (+).
Approximations or prompted responses are scored as (S).
Incorrect responses are indicated as (-).
Write a (0) if the student did not answer or respond.

Only the nonspeech responses are recorded in this Level.

Practice Scoring Grids:

LEVEL B: ROUTINELY VOCALIZES

In this level, the training goal is to encourage the student to vocalize each time they sign or point, but as in Level A, only the nonspeech responses count toward criterion for the language training.

The student receives a (+) for perfect articulation of a word. This score is not often used in Level B. The most frequently used speech score for this Level is (S). It is recorded for speech approximations or prompted speech. A (-) is for incorrect or conflicting responses. For students with very gross vocalizations, there would be no incorrect speech responses.

Practice Scoring Grids:

LEVEL C: APPROXIMATES SPOKEN WORDS

The Level C training goal is to establish functional speech skills by supporting the speech with some type of nonspeech response.

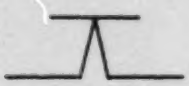
This Level is only used with signing students.

The only responses which count toward criterion are those in which the speech and nonspeech (sign) combine to form a unit that a novice listener would understand out of context.

The nonspeech and speech are scored as before on the grids with the same definitions as given in Levels A and B.

The top of the grid is for the "acceptability" score. The acceptability score indicates whether or not both the speech and non speech responses occurred, and whether or not the response unit was understood.

Practice Scoring Grids:



BLANK FORMS

(Provided for duplication and use in training)

Board
Signing

Skill Test Scoring Form for Step 1

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

In blanks 6-16 list the 16 items that are used in Step 1; then list them again (not in the same order) in blanks 17-32.

	Item	Score		Item	Score
1.			17.		
2.			18.		
3.			19.		
4.			20.		
5.			21.		
6.			22.		
7.			23.		
8.			24.		
9.			25.		
10.			26.		
11.			27.		
12.			28.		
13.			29.		
14.			30.		
15.			31.		
16.			32.		

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech					Speech				Acceptability	
	+	/	-	S	0	+	-	S	0	+	0
Score											
Percent											

Board Signing

Type 1

Scoring Form for Step 1

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

This scoring form can be used for either the one-pair or two pair presentations described in Step 1 training procedures. For training pairs of items, assign numbers (1) and (3) to the first item (for a total of 32 trials); assign numbers (2) and (4) to the second item in the pair (for the remaining 32 trials). When training all four items, assign each to a single number (16 trials each).

List Items Used: (1) _____ (2) _____ (3) _____ (4) _____

1. (1)	17. (4)	33. (1)	49 (3)
2. (3)	18. (2)	34. (4)	50. (2)
3. (2)	19. (3)	35. (2)	51. (4)
4. (4)	20. (1)	36. (2)	52. (1)
5. (1)	21. (4)	37. (3)	53. (3)
6. (1)	22. (4)	38. (4)	54. (2)
7. (2)	23. (1)	39. (3)	55. (3)
8. (3)	24. (2)	40. (1)	56. (1)
9. (4)	25. (3)	41. (3)	57. (4)
10. (2)	26. (4)	42. (2)	58. (2)
11. (1)	27. (2)	43. (4)	59. (4)
12. (4)	28. (1)	44. (1)	60. (1)
13. (3)	29. (1)	45. (2)	61. (2)
14. (2)	30. (3)	46. (1)	62. (3)
15. (4)	31. (2)	47. (3)	63. (1)
16. (3)	32. (3)	48. (4)	64. (4)

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech					Speech				Acceptability	
	+	/	-	S	0	+	-	S	0	+	0
Score											
Percent											

Board
Signing

Type 2

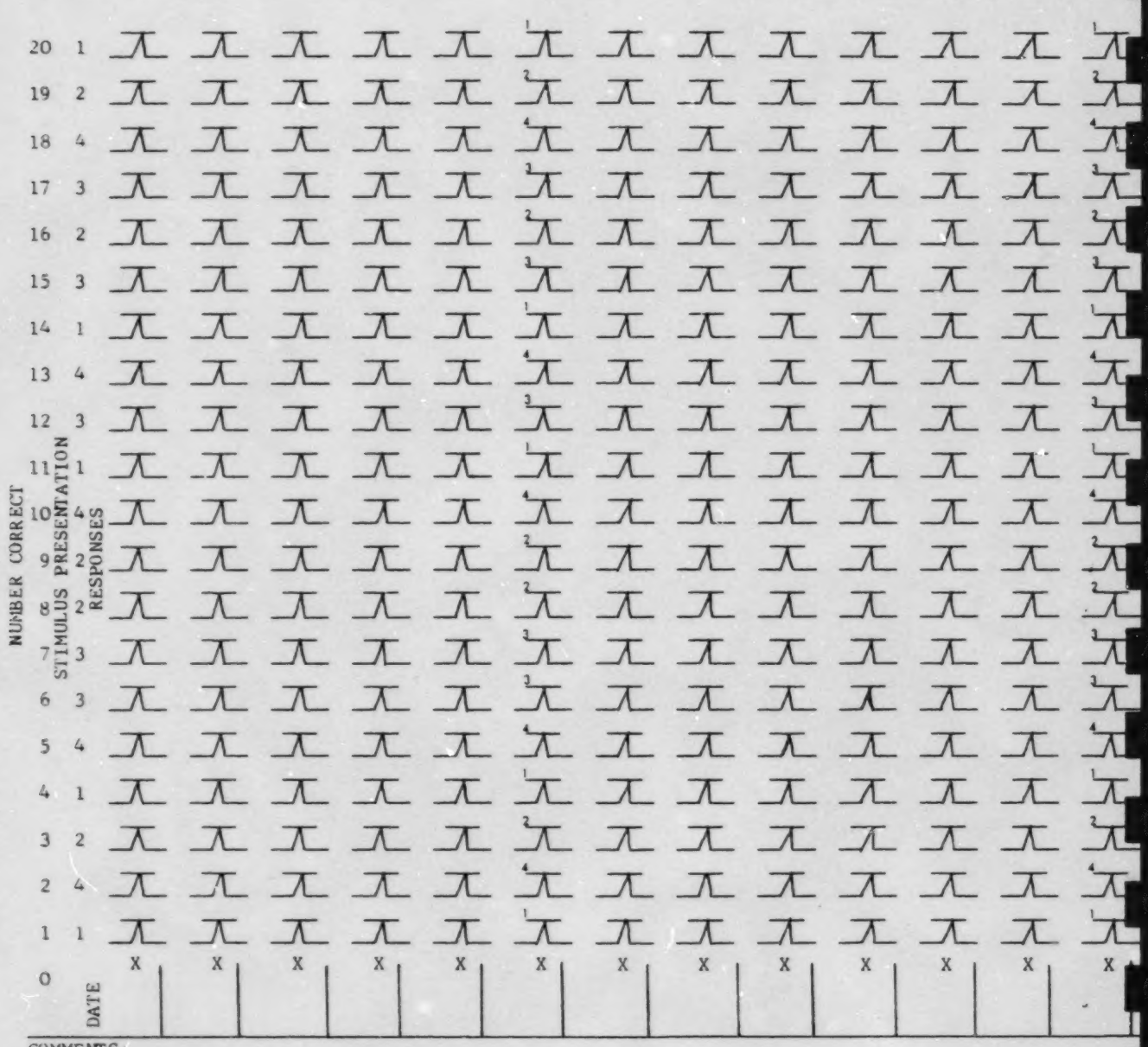
Scoring Form for Step 1

Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items: 1) _____ 2) _____ 3) _____ 4) _____

a: WHAT'S THAT? "label" Two or Four Items



COMMENTS:

Board
Signing

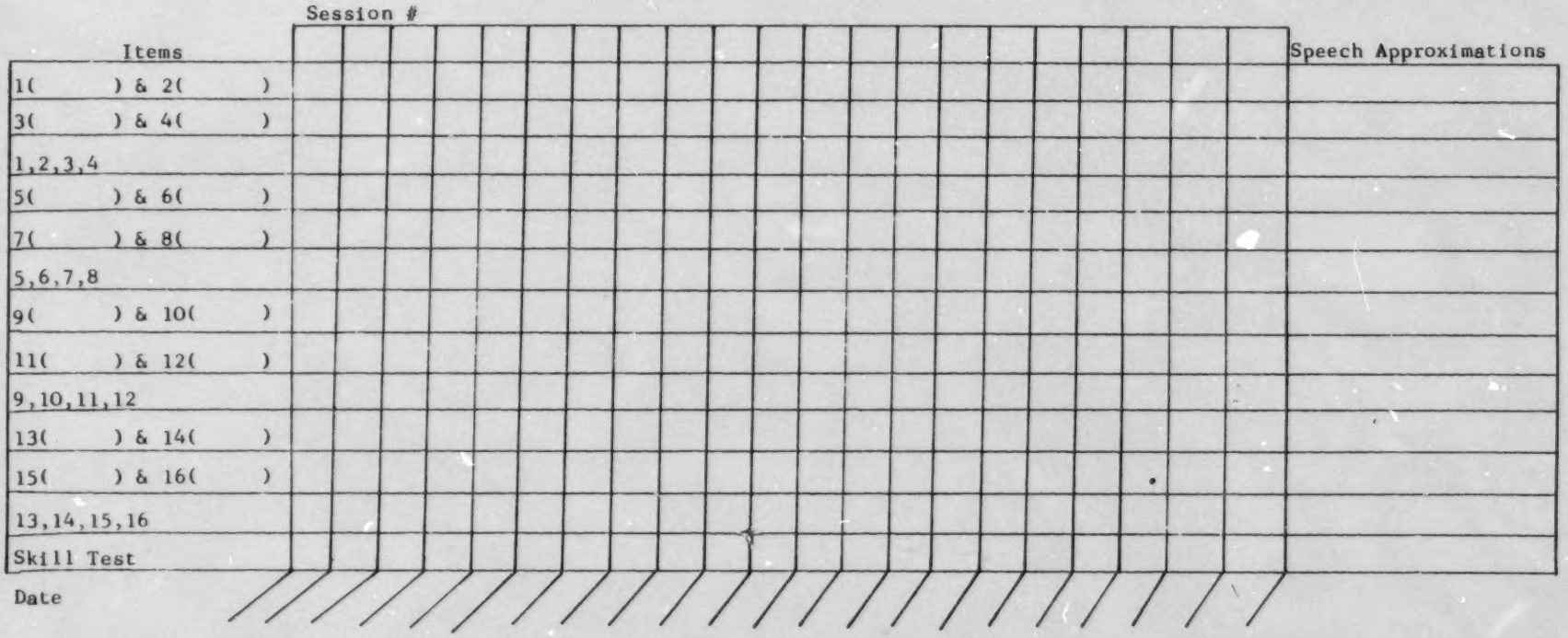
Summary Form for Step 1

Speech Level: _____ Trainer's Stimulus: _____

Student _____ Trainer _____

Date Training Started _____ Date Training Ended _____ Total Sessions to Criterion _____

Percent Correct Responses Across Sessions



Items Used in Training

1. _____	5. _____	9. _____	13. _____
2. _____	6. _____	10. _____	14. _____
3. _____	7. _____	11. _____	15. _____
4. _____	8. _____	12. _____	16. _____

Board Display

(Circled percentages represent criterion based on 12 consecutive correct responses.)

Board
Signing

Skill Test Scoring Form for STEP 2

Student _____ Date _____ Session # _____

Trainer _____

Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

List the 16 items (twice) that are used for training in STEP 2

	ITEM	SCORE		ITEM	SCORE
1.			1		
2.			2.		
3.			3.		
4.			4		
5.			5.		
6.			6.		
7.			7.		
8.			8.		
9.			9.		
10.			10.		
11.			11.		
12.			12.		
13.			13.		
14.			14.		
15.			15.		
16.			16.		

Score trials as correct (+); incorrect (-); shape (S); or no response (0).

Summary for Test (based on 32 trials)

	+	-	S	0
Score				
Percent				

Board Signing

Type 1

Scoring Form for Step 2

Student _____ Date _____ Session # _____

Trainer _____

Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

This scoring form can be used for either two - or four-item presentations described in Step 2 training procedures. For training pairs of items, assign number 1 and 3 to the first item and assign number 2 and 4 to the second item in the pair. When training all four items, assign each to a single number.

Last items used: (1) _____ (2) _____ (3) _____ (4) _____

1.	(3) _____	17.	(4) _____	33.	(1) _____	49.	(3) _____
2.	(3) _____	18.	(2) _____	34.	(4) _____	50.	(2) _____
3.	(2) _____	19.	(3) _____	35.	(2) _____	51.	(4) _____
4.	(4) _____	20.	(1) _____	36.	(4) _____	52.	(1) _____
5.	(1) _____	21.	(4) _____	37.	(3) _____	53.	(3) _____
6.	(1) _____	22.	(4) _____	38.	(4) _____	54.	(2) _____
7.	(2) _____	23.	(1) _____	39.	(3) _____	55.	(3) _____
8.	(3) _____	24.	(2) _____	40.	(1) _____	56.	(1) _____
9.	(4) _____	25.	(3) _____	41.	(3) _____	57.	(4) _____
10.	(2) _____	26.	(4) _____	42.	(2) _____	58.	(2) _____
11.	(1) _____	27.	(2) _____	43.	(2) _____	59.	(4) _____
12.	(4) _____	28.	(1) _____	44.	(1) _____	60.	(1) _____
13.	(3) _____	29.	(1) _____	45.	(2) _____	61.	(2) _____
14.	(2) _____	30.	(3) _____	46.	(1) _____	62.	(3) _____
15.	(4) _____	31.	(2) _____	47.	(3) _____	63.	(1) _____
16.	(3) _____	32.	(3) _____	48.	(4) _____	64.	(4) _____

Score trials as correct (+); incorrect (-); shape (S); or no response (0).

Percent Summary for Session

	+	-	S	0
2 items Score				
or				
4 items Percent				

Board
Signing

Type 2

Scoring Form for Step 2

Student _____ Trainer _____

Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items: 1) _____ 2) _____ 3) _____ 4) _____

a: SHOW ME (LABEL) (points to object)

NUMBER CORRECT	STIMULUS PRESENTATION	RESPONSES													
20	1							1							1
19	3							3							3
18	2							2							2
17	4							4							4
16	1							1							1
15	1							1							1
14	2							2							2
13	3							3							3
12	4							4							4
11	2							2							2
10	1							1							1
9	4							4							4
8	3							3							3
7	2							2							2
6	4							4							4
5	3							3							3
4	4							4							4
3	2							2							2
2	3							3							3
1	1							1							1
0		X	X	X	X	X	X	X	X	X	X	X	X	X	X
	DATE														

COMMENTS:

Board
Signing

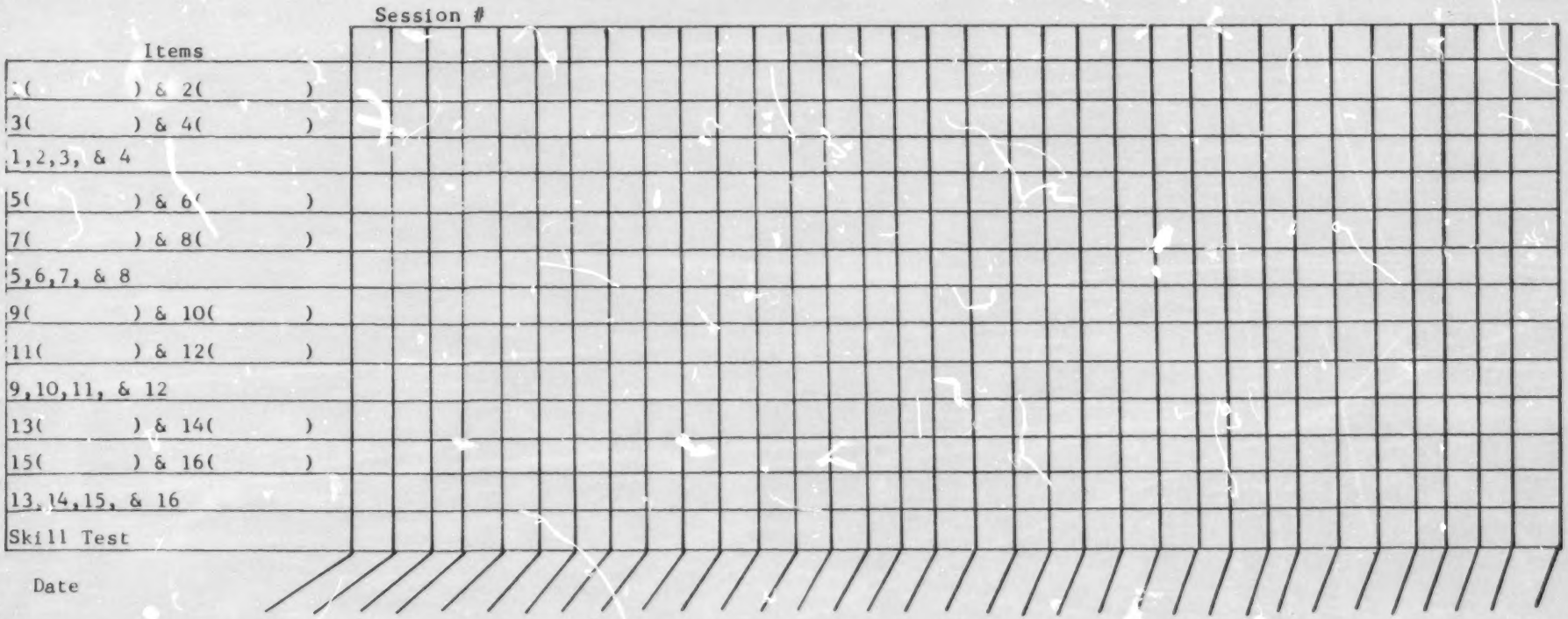
Summary Form for Step 2

Trainer's Stimulus: _____

Student _____ Trainer _____

Date Training Started _____ Date Training Ended _____ Total Sessions to Criterion _____

Percent Correct Responses Across Sessions



(Circled percentages represent criterion based on 12 consecutive correct responses.)

Board

Skill Test Scoring Form for Step 3

Student _____ Date _____ Session #_____

Trainer_____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

Present this item WHAT'S THAT	Expected Response	Score	Present this item WHAT'S THAT	Expected Response	Score
1._____	"(label)"		21._____	"(label)"	
2._____	"no-card"		22._____	"no-card"	
3._____	"no-card"		23._____	"no-card"	
4._____	"(label)"		24._____	"no-card"	
5._____	"(label)"		25._____	"(label)"	
6._____	"no-card"		26._____	"no-card"	
7._____	"(label)"		27._____	"no-card"	
8._____	"no-card"		28._____	"(label)"	
9._____	"no-card"		29._____	"(label)"	
10._____	"no-card"		30._____	"(label)"	
11._____	"(label)"		31._____	"no-card"	
12._____	"no-card"		32._____	"(label)"	
13._____	"(label)"		33._____	"no-card"	
14._____	"no-card"		34._____	"(label)"	
15._____	"(label)"		35._____	"no-card"	
16._____	"(label)"		36._____	"(label)"	
17._____	"(label)"		37._____	"(label)"	
18._____	"no-card"		38._____	"no-card"	
19._____	"no-card"		39._____	"(label)"	
20._____	"(label)"		40._____	"no-card"	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no respons (0).

Percent Summary for Session

	Nonspeech					Speech			
	+	+	-	S	0	+	-	S	0
Score									
Percent									

Board

Type 1

Scoring Form for Step 3

Student _____ Date _____ Session #_____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

List items used:
Symbolized 1) _____ 2) _____ Nonsymbolized 3) _____ 4) _____

	Present this item WHAT'S THAT	Expected Response	Score		Present this item WHAT'S THAT	Expected Response	Score
1.	(1)	"(label)"		19.	(3)	"no card"	
2.	(4)	"no card"		20.	(1)	"(label)"	
3.	(2)	"(label)"		21.	(4)	"no card"	
4.	(4)	"no card"		22.	(4)	"no card"	
5.	(1)	"(label)"		23.	(1)	"(label)"	
6.	(1)	"(label)"		24.	(2)	"(label)"	
7.	(2)	"(label)"		25.	(3)	"no card"	
8.	(3)	"no card"		26.	(2)	"(label)"	
9.	(4)	"no card"		27.	(2)	"(label)"	
10.	(1)	"(label)"		28.	(1)	"(label)"	
11.	(3)	"no card"		29.	(1)	"(label)"	
12.	(4)	"no card"		30.	(3)	"no card"	
13.	(3)	"no card"		31.	(2)	"(label)"	
14.	(2)	"(label)"		32.	(3)	"no card"	
15.	(4)	"no card"		33.	(1)	"(label)"	
16.	(3)	"no card"		34.	(4)	"no card"	
17.	(4)	"no card"		35.	(3)	"no card"	
18.	(2)	"(label)"		36.	(2)	"(label)"	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

Nonspeech

	+	+	-	S	0
Score					
Percent					

Speech

	+	-	S	0

Board

Type 2

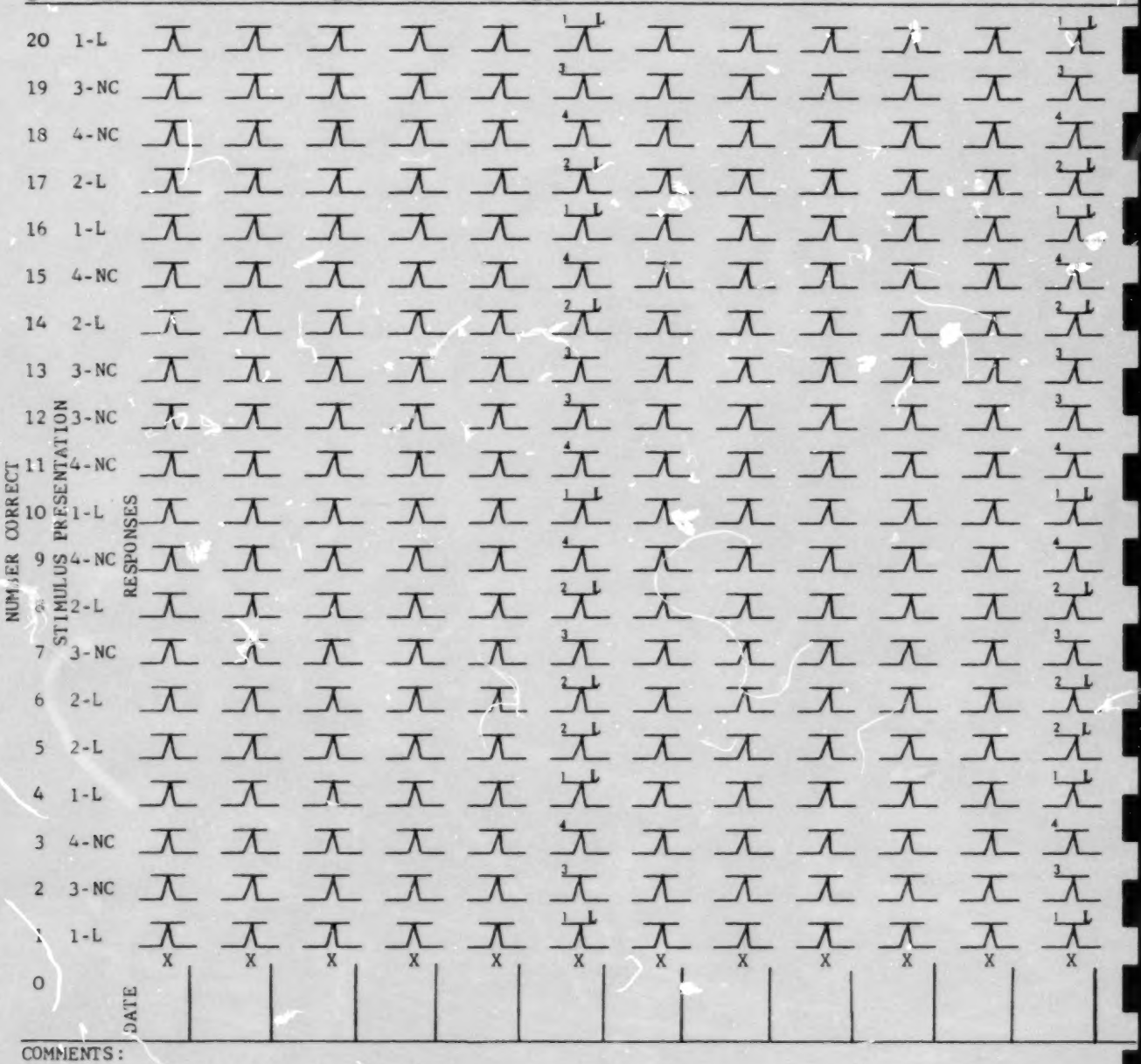
Scoring Form for Step 3

Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Symbolized Items 1)_____ 2)_____ Nonsymbolized Items 3)_____ 4)_____

a: "WHAT'S THAT?" L: "label" NC: "no card"



COMMENTS:

Board

Summary Form for Step 3

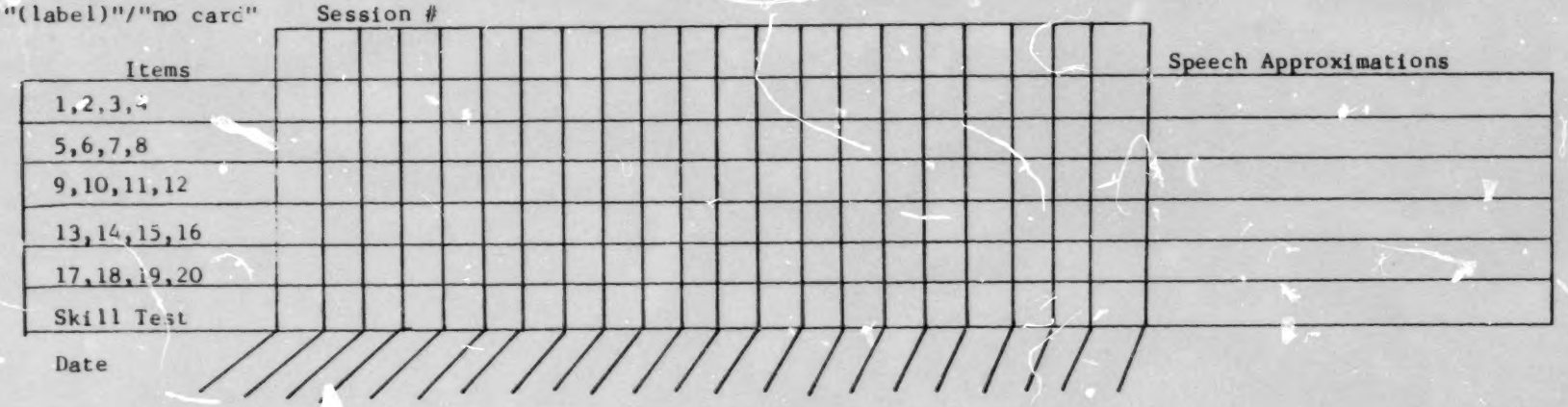
Speech Level: _____ Trainer's Stimulus: _____

Student _____ Trainer _____

Date Training Started _____ Date Training Ended _____ Total Sessions to Criterion _____

Percent Correct Responses Across Sessions

"(label)"/"no card" Session #



Items used in training

Symbolized 1. _____ 10. _____

2. _____ 13. _____

5. _____ 14. _____

6. _____ 17. _____

_____ 18. _____

Nonsymbolized 3. _____ 12. _____

4. _____ 15. _____

7. _____ 16. _____

8. _____ 19. _____

11. _____ 20. _____

(Circled percentages represent criterion based on 12 consecutive correct responses.)

Board

Type 1

Scoring Form for Step 4

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

List Symbolized Items Used:

(1) _____ (2) _____ (3) _____ (4) _____ (5) _____

(6) _____ (7) _____ (8) _____ (9) _____ (10) _____

Present this item: Ask, WHAT WANT?	Expected Response "want" (label) (Score)	Present this item: Ask, WHAT WANT?	Expected Response "want (label)" (Score)	Present this item: Ask, WHAT WANT?	Expected Response "want (label)" (Score)
1. (1)		11. (1)		21. (1)	
2. (2)		12. (2)		22. (2)	
3. (3)		13. (3)		23. (3)	
4. (4)		14. (4)		24. (4)	
5. (5)		15. (5)		25. (5)	
6. (6)		16. (6)		26. (6)	
7. (7)		17. (7)		27. (7)	
8. (8)		18. (8)		28. (8)	
9. (9)		19. (9)		29. (9)	
10. (10)		20 (10)		30. (10)	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech +	Nonspeech +	Nonspeech -	Nonspeech S	Nonspeech 0	Speech +	Speech -	Speech S	Speech 0
Score									
Percent									

Board

Type 2

Scoring Form for Step 4

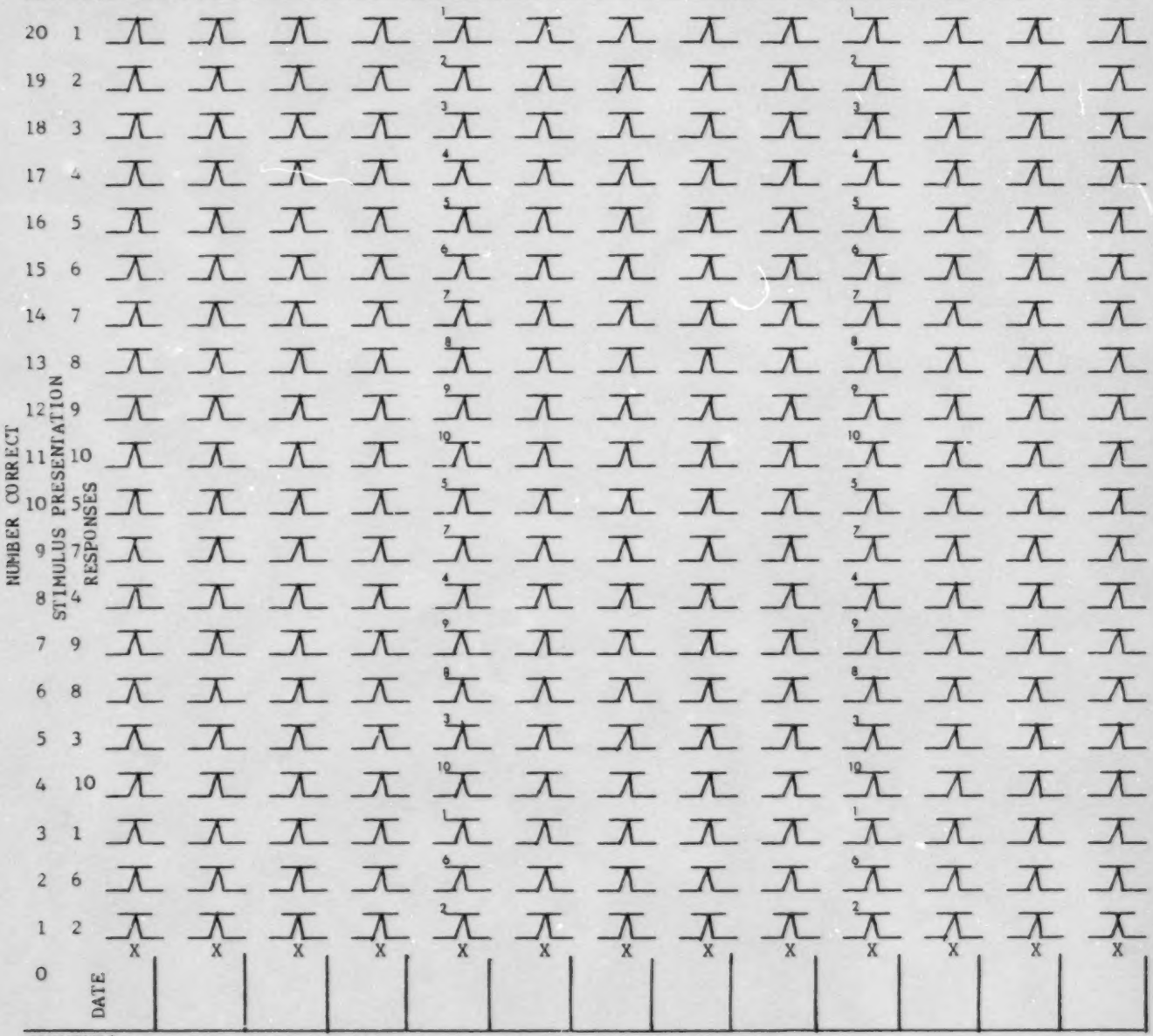
Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech Speech Alone Nonspeech Alone

Items Symbolized: 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

6)_____ 7)_____ 8)_____ 9)_____ 10)_____

a) WHAT DO YOU WANT? "want (label)"



COMMENTS

Boarc

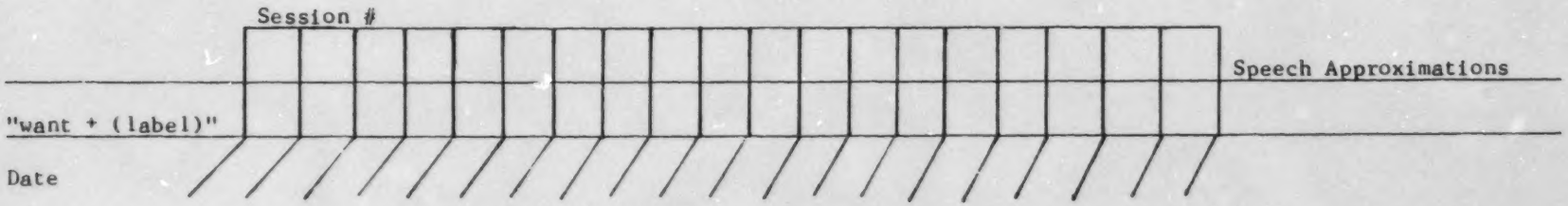
Summary Form for Step 4

Speech Level: _____ Trainer's Stimulus: _____

Student _____ Trainer _____

Date Training Started _____ Date Training Ended _____ Total Sessions to Criterion _____

Percent Correct Responses Across Sessions



(Circled percentages represent criterion based on 12 consecutive correct responses.)

Board

Type 1

Scoring Form for Step 5

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech Speech Alone Nonspeech Alone

List Nonsymbolized Items Used: 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

6)_____ 7)_____ 8)_____ 9)_____ 10)_____

Present this item Ask, WHAT WANT?	Expected Response: "want" object (Score)	Present this item Ask, WHAT WANT?	Expected Response: "want" object (Score)	Present this item Ask, WHAT WANT?	Expected Response: "want" object (Score)
1. (1)		11. (1)		21. (1)	
2. (2)		12. (2)		22. (2)	
3. (3)		13. (3)		23. (3)	
4. (4)		14. (4)		24. (4)	
5. (5)		15. (5)		25. (5)	
6. (6)		16. (6)		26. (6)	
7. (7)		17. (7)		27. (7)	
8. (8)		18. (8)		28. (8)	
9. (9)		19. (9)		29. (9)	
10. (10)		20. (10)		30. (10)	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech					Speech			
	+	+	-	S	0	+	-	S	0
Score									
Percent									

Board

Type 2

Scoring Form for Step 5

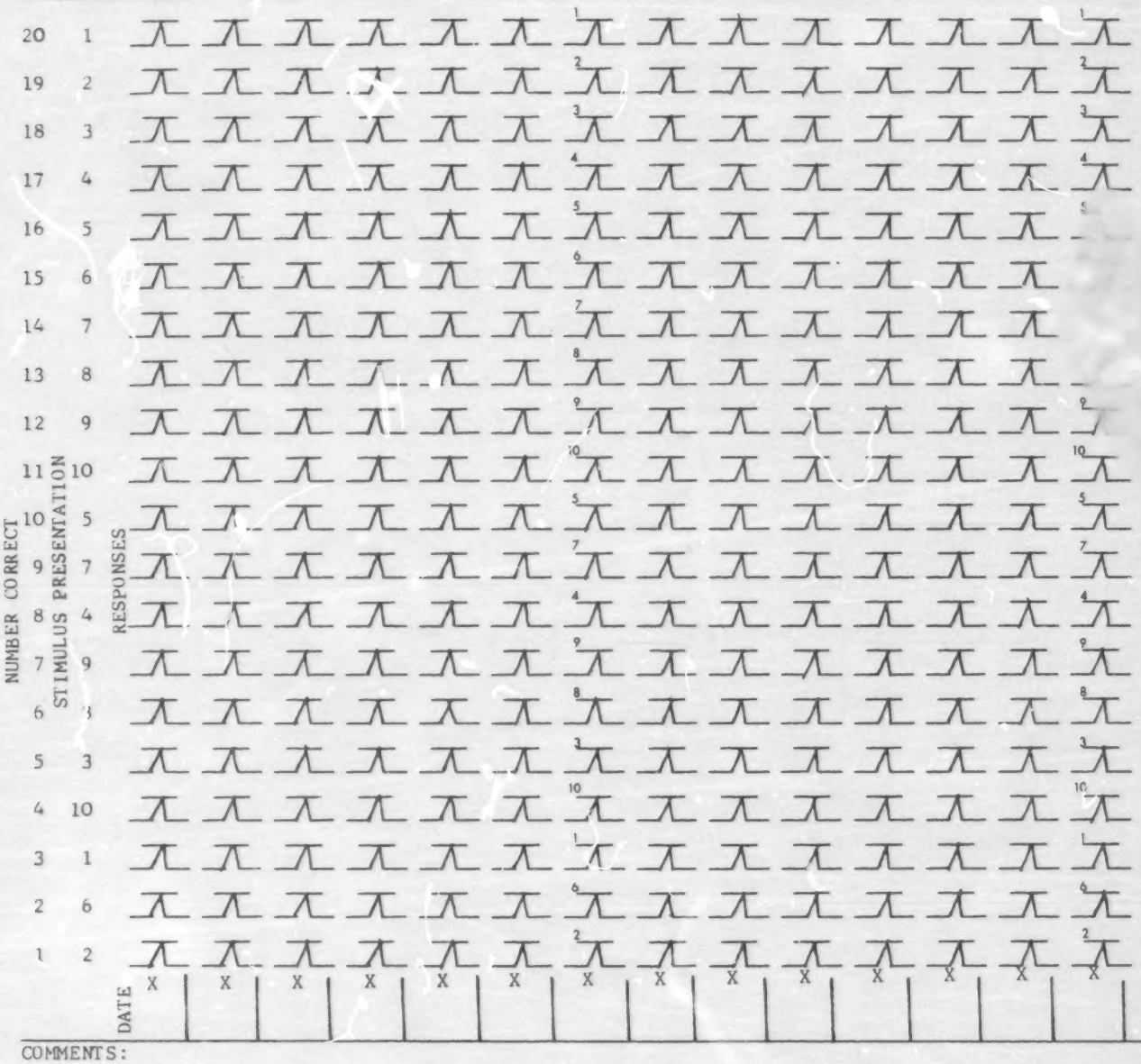
Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items Not Symbolized: 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

6)_____ 7)_____ 8)_____ 9)_____ 10)_____

a) WHAT DO YOU WANT? "want" object



COMMENTS:

Boarc

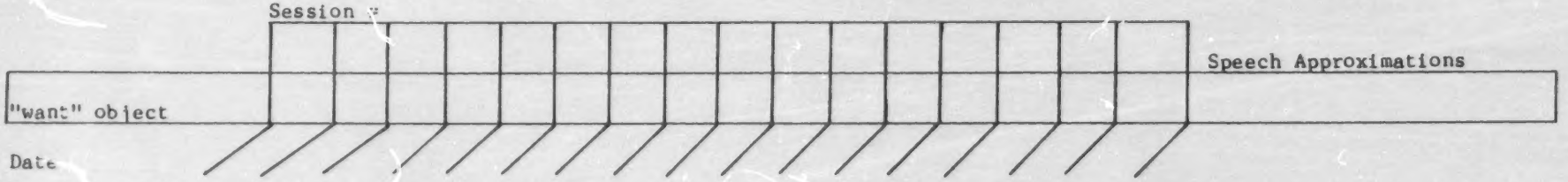
Summary Form for Step 5

Speech Level: _____ Trainer's Stimulus _____

Student _____ Trainer _____

Date Training Started _____ Date Training Ended _____ Total Sessions to Criterion _____

Percent of Correct Responses Across Sessions



(Circled percentages represent criterion based on 12 consecutive correct responses.)

Board

Type 1

Scoring Form for Step 6 (Phase I)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items Used: Symbolized 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

Nonsymbolized 6)_____ 7)_____ 8)_____ 9)_____ 10)_____

Present this item Ask, WHAT WANT?	Expected Response	Score	Present this item Ask, WHAT WANT?	Expected Response	Score
1. (1)	"want(label)"		16. (3)	"want(label)"	
2. (6)	"want"object		17. (8)	"want"object	
3. (3)	"want(label)"		18. (9)	"want"object	
4. (4)	"want(label)"		19. (7)	"want"object	
5. (7)	"want"object		20. (4)	"want(label)"	
6. (5)	"want"(label)"		21. (5)	"want(label)"	
7. (8)	"want"object		22. (6)	"want"object	
8. (9)	"want(label)"		23. (5)	"want(label)"	
9. (2)	"want(label)"		24. (2)	"want(label)"	
10. (10)	"want"object		25. (9)	"want"object	
11. (6)	"want"object		26. (10)	"want"object	
12. (7)	"want"object		27. (3)	"want(label)"	
13. (1)	"want"object		28. (1)	"want(label)"	
14. (8)	"want"object		29. (4)	"want(label)"	
15. (2)	"want"(label)"		30. (10)	"want"object	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (O).

Percent Summary for Session

	Nonspeech					Speech			
	+	+	-	S	O	+	-	S	O
Score									
Percent									

Board

Type 2

Scoring Form for Step 6 (Phase I)

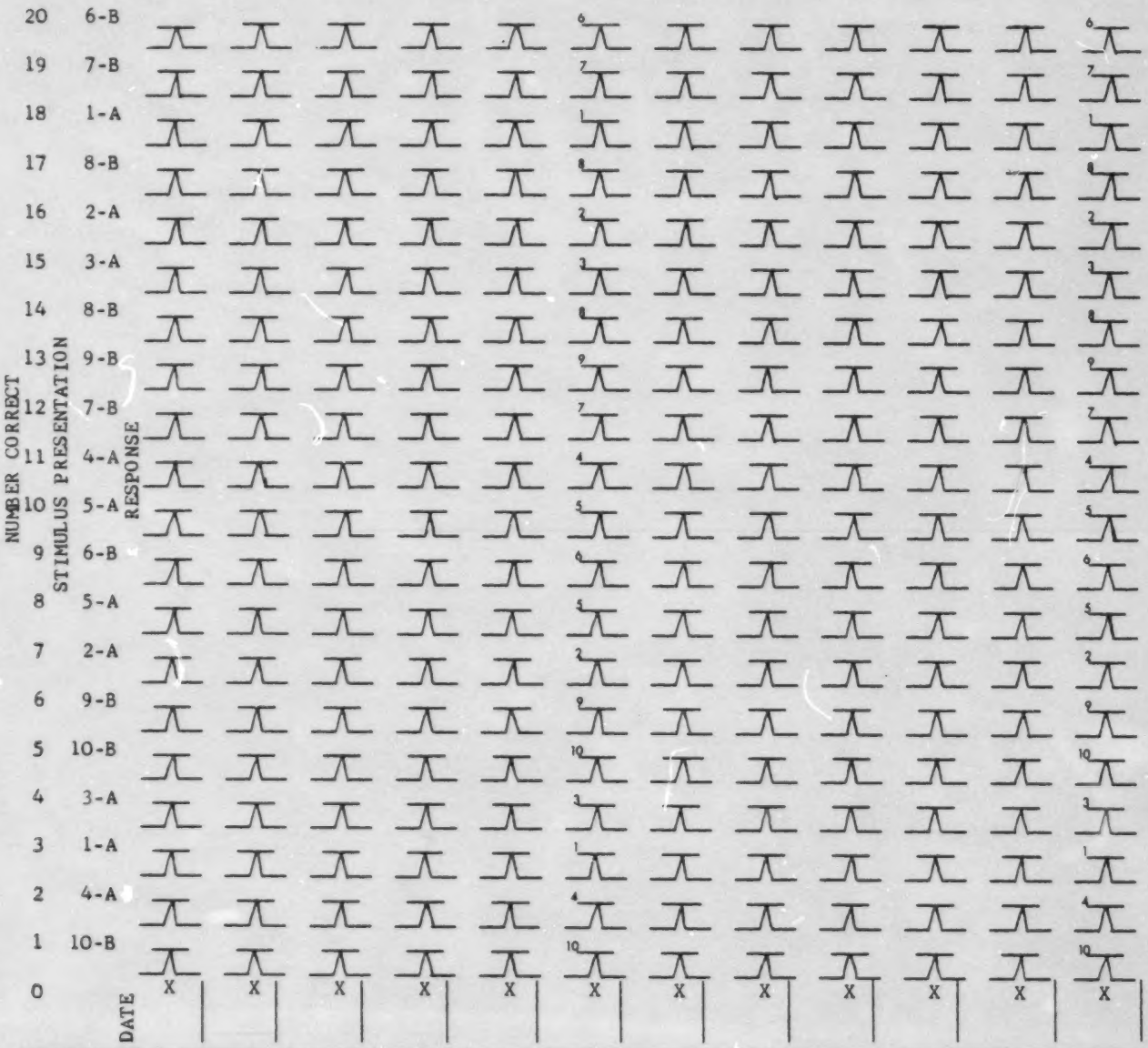
Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

Symbolized Items: 1) _____ 2) _____ 3) _____ 4) _____ 5) _____

Nonsymbolized Items: 6) _____ 7) _____ 8) _____ 9) _____ 10) _____

a: WHAT WANT? A: "want (label)" B: "want" object



COMMENTS:

Board Type 1

Scoring Form for Step 6 (Phase II)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items Displayed: Symbolized 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

Nonsymbolized 6)_____ 7)_____ 8)_____ 9)_____ 10)_____

Display All Items Ask WHAT WANT?	Expected Response "want (label)" "want" object	Display All Items Ask WHAT WANT?	Expected Response "want (label)" "want" object
1.		16.	
2.		17.	
3.		18.	
4.		19.	
5.		20.	
6.		21.	
7.		22.	
8.		23.	
9.		24.	
10.		25.	
11.		26.	
12.		27.	
13.		28.	
14.		29.	
15.		30.	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech					Speech			
	+	+	-	S	0	+	-	S	0
Score									
Percent									

Board

Type 2

Scoring Form for Step 6 (Phase II)

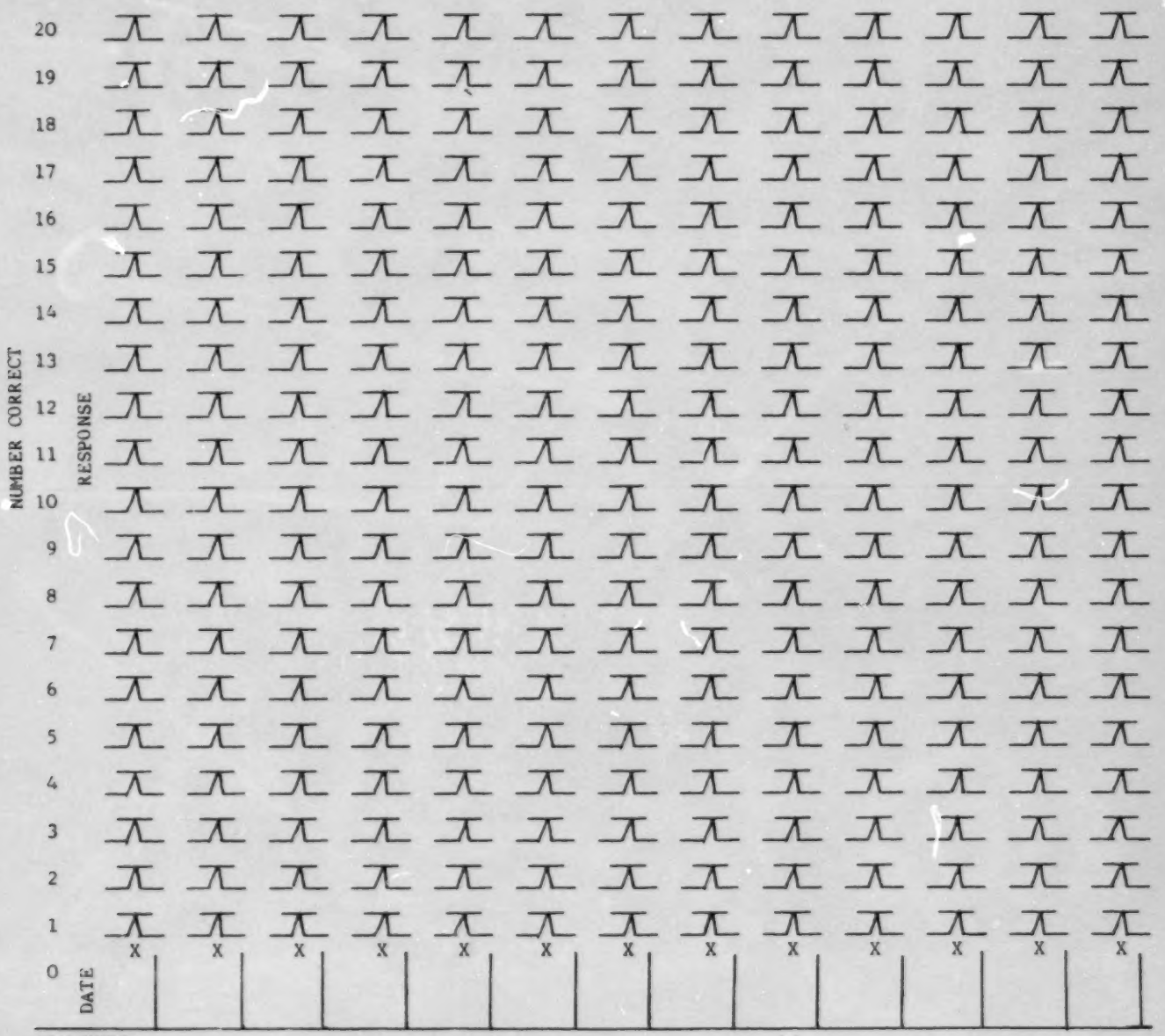
Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Symbolized Items: 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

Nonsymbolized Items: 6)_____ 7)_____ 8)_____ 9)_____ 10)_____

a: WHAT WANT? "want (label)" or "want" object



COMMENTS:

Board

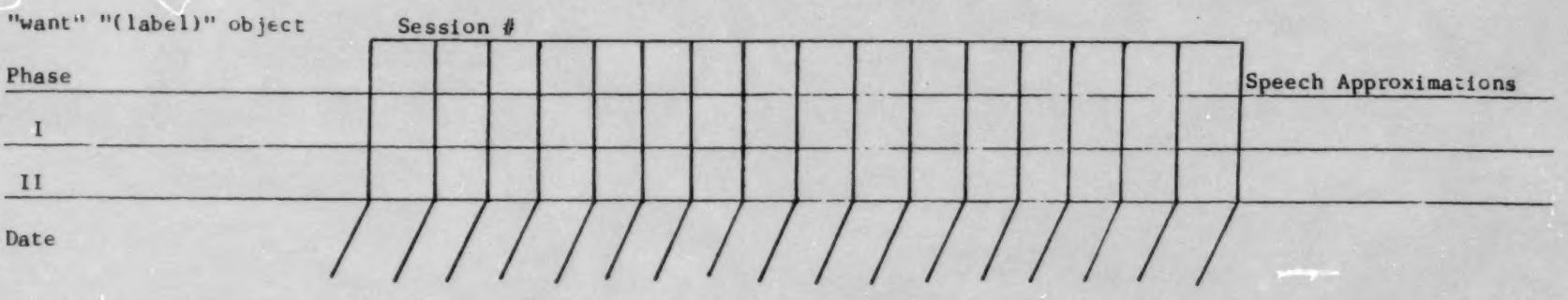
Summary Form for Step 6

Speech Level: _____ Trainer's Stimulus: _____

Student _____ Trainer _____

Date Training Startec _____ Date Training Ended _____ Total Sessions to Criterion _____

Percent Correct Responses Across Sessions



(Circled percentages represent criterion based on 12 consecutive correct responses.)

Board Signing

SKILL TEST SCORING FORM FOR STEP 7

Student_____ Date_____ Session # _____

Trainer_____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

The trainer is free to select items which meet the needs of each student, based on the student's ability to label the objects. The items used in trials 1-16 are repeated in randomized order in trials 17-32. If the blank in the SHOW column is followed by (Y), place that same item in the blank in the ASK column to elicit a "yes" answer. If there is an (N) after the blank in the SHOW column, use another of the 16 items in the ASK column to elicit a "no" answer. Each item should have a yes and a no question. Remember that criterion is based on all 32 trials.

SHOW	ASK	SCORE	SHOW	ASK	SCORE
1._____(Y)	IS THIS A_____?		17._____(Y)	IS THIS A_____?	
2._____(N)	IS THIS A_____?		18._____(N)	IS THIS A_____?	
3._____(N)	IS THIS A_____?		19._____(N)	IS THIS A_____?	
4._____(Y)	IS THIS A_____?		20._____(Y)	IS THIS A_____?	
5._____(N)	IS THIS A_____?		21._____(N)	IS THIS A_____?	
6._____(Y)	IS THIS A_____?		22._____(Y)	IS THIS A_____?	
7._____(Y)	IS THIS A_____?		23._____(Y)	IS THIS A_____?	
8._____(Y)	IS THIS A_____?		24._____(Y)	IS THIS A_____?	
9._____(N)	IS THIS A_____?		25._____(N)	IS THIS A_____?	
10._____(Y)	IS THIS A_____?		26._____(N)	IS THIS A_____?	
11._____(N)	IS THIS A_____?		27._____(N)	IS THIS A_____?	
12._____(N)	IS THIS A_____?		28._____(Y)	IS THIS A_____?	
13._____(Y)	IS THIS A_____?		29._____(N)	IS THIS A_____?	
14._____(N)	IS THIS A_____?		30._____(Y)	IS THIS A_____?	
15._____(N)	IS THIS A_____?		31._____(N)	IS THIS A_____?	
16._____(Y)	IS THIS A_____?		32._____(Y)	IS THIS A_____?	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech				Speech				Acceptability	
	+	-	S	0	+	-	S	0	+	0
Score										
Percent										

Board
Signing

Type 1

Scoring Form for Step 7 (Phases I and II)

Student _____ Date _____ Session #_____
Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

List item used if different than the example (ball) on the scoring form: _____

Circle phase: Phase I: Phase II

	Ask, WHAT IS THIS?	Ask, IS THIS A BALL? (Phase I); IS THIS A ____? (Phase II)		Ask, WHAT IS THIS?	Ask, IS THIS A BALL? (Phase I); IS THIS A ____? (Phase II)
1.			17.		
2.			18.		
3.			19.		
4.			20.		
5.			21.		
6.			22.		
7.			23.		
8.			24.		
9.			25.		
10.			26.		
11.			27.		
12.			28.		
13.			29.		
14.			30.		
15.			31.		
16.			32.		

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (NR). For Level C only, score each trial as acceptable as a total response (+); or not acceptable as a total response (0).

Percent Summary for Session

		Nonspeech					Speech				Acceptability	
		+	p	-	S	0	+	-	S	0	+	0
Label ( )	Score											
	Percent											
"Yes" (Phase I)	Score											
"No" (Phase II)	Percent											
Total	Score											
	Percent											

Board Signing

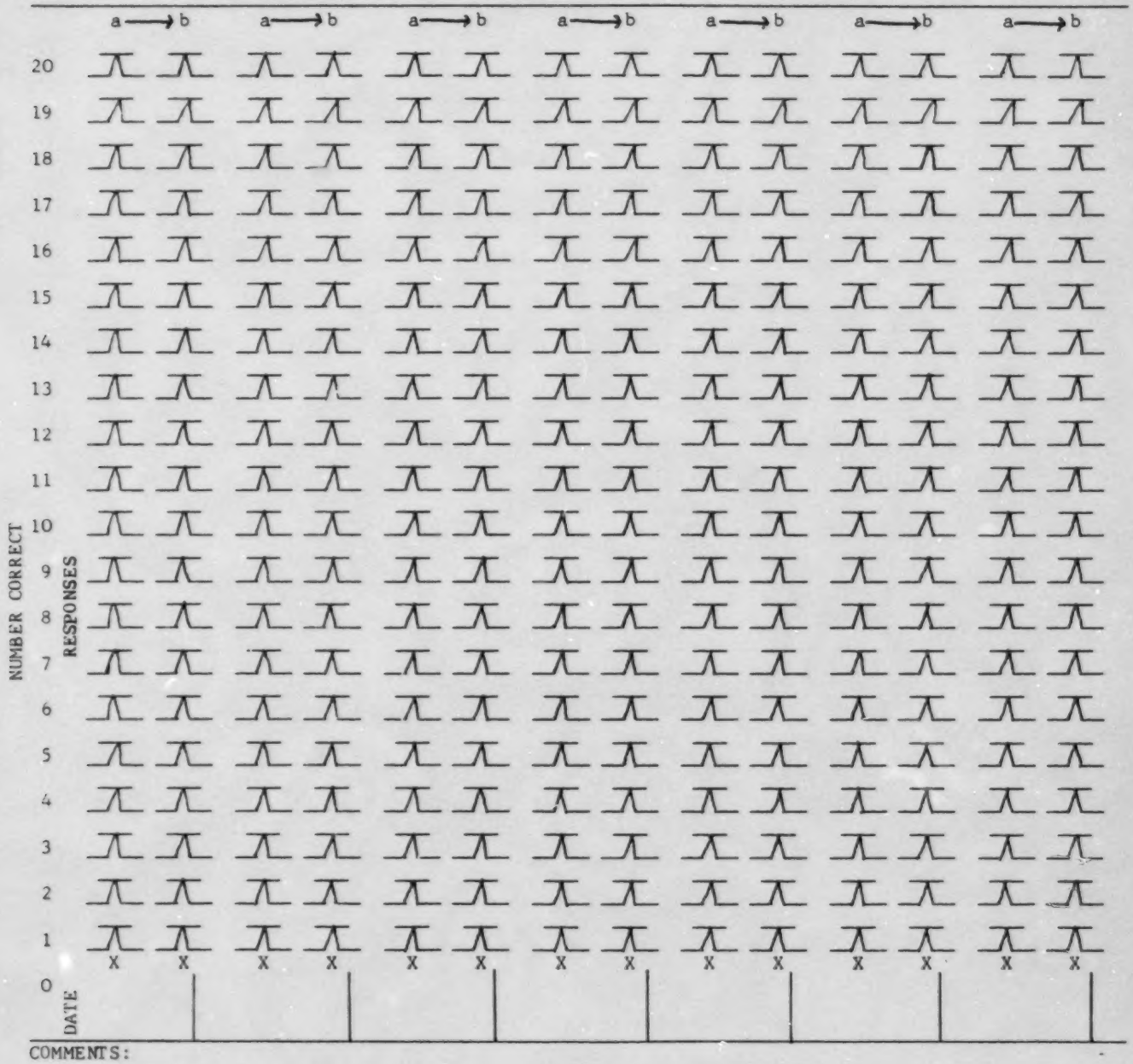
Type 2

Scoring Form for Step 7 (Phases I and II)

Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Circle appropriate phase above.
List item used: _____ a) WHAT IS THIS? "Label" b) IS THIS A (Label)? "yes"(I) "no"(II)



COMMENTS:

Board Signing

Type I

Scoring Form for Step 7 (Phases III, V, IX, XI, XIII)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech Speech Alone Nonspeech Alone

Circle appropriate phase and write in item used: Phase III _____; Phase V _____

Phase IX _____; Phase XI _____; Phase XIII _____

On the scoring form (label) refers to the label appropriate to the item displayed, thus requiring a "yes" response; the blank (_____)? indicates the substitution of labels which are different from the item displayed, thus requiring a "no" response.

Display Item, Ask WHAT IS THIS ?	Expected Response: "(Label)"	Ask, IS THIS A ...	Expected Response	
1.		(label)?	"yes"	
2.		_____?	"no"	
3.		_____?	"no"	
4.		(label)?	"yes"	
5.		(label)?	"yes"	
6.		_____?	"no"	
7.		(label)?	"yes"	
8.		_____?	"no"	
9.		_____?	"no"	
10.		_____?	"no"	
11.		(label)?	"yes"	
12.		(label)?	"yes"	
13.		(label)?	"yes"	
14.		_____?	"no"	
15.		_____?	"no"	
16.		(label)?	"yes"	
17.		(label)?	"yes"	
18.		_____?	"no"	
19.		(label)?	"yes"	
20.		_____?	"no"	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (NR). For Level C only, score each trial as acceptable as a total response (+); or not acceptable as a total response (0).

Percent Summary for Session

		Nonspeech					Speech				Acceptability	
		+	/	-	S	0	+	-	S	0	+	0
Label ( )	Score											
	Percent											
Yes/No	Score											
	Percent											
Total	Score											
	Percent											

Board Signing

Type 2

Scoring Form for Step 7 (Phase III,V,IX,XI,XIII)

Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Circle appropriate phase above. Item: _____

a) WHAT IS THIS? L="(label)" b) IS THIS (LABEL)?* Y="yes" N="no"

*LABEL included in this question depends on "Y" or "N" code in the Stimulus column.

NUMBER CORRECT | STIMULATION PRESENTATION | RESPONSES

		a → b		a → b		a → b		a → b		a → b		a → b	
20	L-N								N				
19	L-Y												
18	L-Y												
17	L-N								N				
16	L-N								N				
15	L-Y												
14	L-Y												
13	L-N								N				
12	L-Y												
11	L-N								N				
10	L-Y												
9	L-N								N				
8	L-Y												
7	L-N								N				
6	L-N								N				
5	L-N								N				
4	L-Y												
3	L-Y												
2	L-Y												
1	L-N								N				
0		X	X	X	X	X	X	X	X	X	X	X	X

DATE

COMMENTS:

Board Signing

Type 1

Scoring Form for Step 7 (Phases IV and VI)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

Circle appropriate phase and write in item used Phase IV _____ Phase VI _____

On the scoring for. (item label) refers to the label appropriate to the item displayed, thus requiring a "yes" response. The blank (_____?) indicates the substitution of labels which are different from the item displayed, thus requiring a "no" response.

Display item, ask IS THIS A	Expected Response	Score	Display item, ask IS THIS A	Expected Response	Score
1. (label) ?	"yes"		17. (label) ?	"yes"	
2. _____?	"no"		18. _____?	"no"	
3. _____?	"no"		19. (label) ?	"yes"	
4. (label) ?	"yes"		20. _____?	"no"	
5. (label) ?	"yes"		21. _____?	"yes"	
6. _____?	"no"		22. _____?	"no"	
7. (label) ?	"yes"		23. (label) ?	"yes"	
8. _____?	"no"		24. _____?	"no"	
9. _____?	"no"		25. _____?	"no"	
10. _____?	"no"		26. _____?	"no"	
11. (label) ?	"yes"		27. (label) ?	"yes"	
12. (label) ?	"yes"		28. (label) ?	"yes"	
13. (label) ?	"yes"		29. (label) ?	"yes"	
14. _____?	"no"		30. _____?	"no"	
15. _____?	"no"		31. (label) ?	"yes"	
16. (label) ?	"yes"		32. _____?	"no"	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech					Speech				Acceptability	
	+	/	-	S	C	+	-	S	0	+	0
Score											
Percent											

Board
Signing

Type 2

Scoring Form for Step 7 (Phases IV and VI)

Student _____ Trainer _____

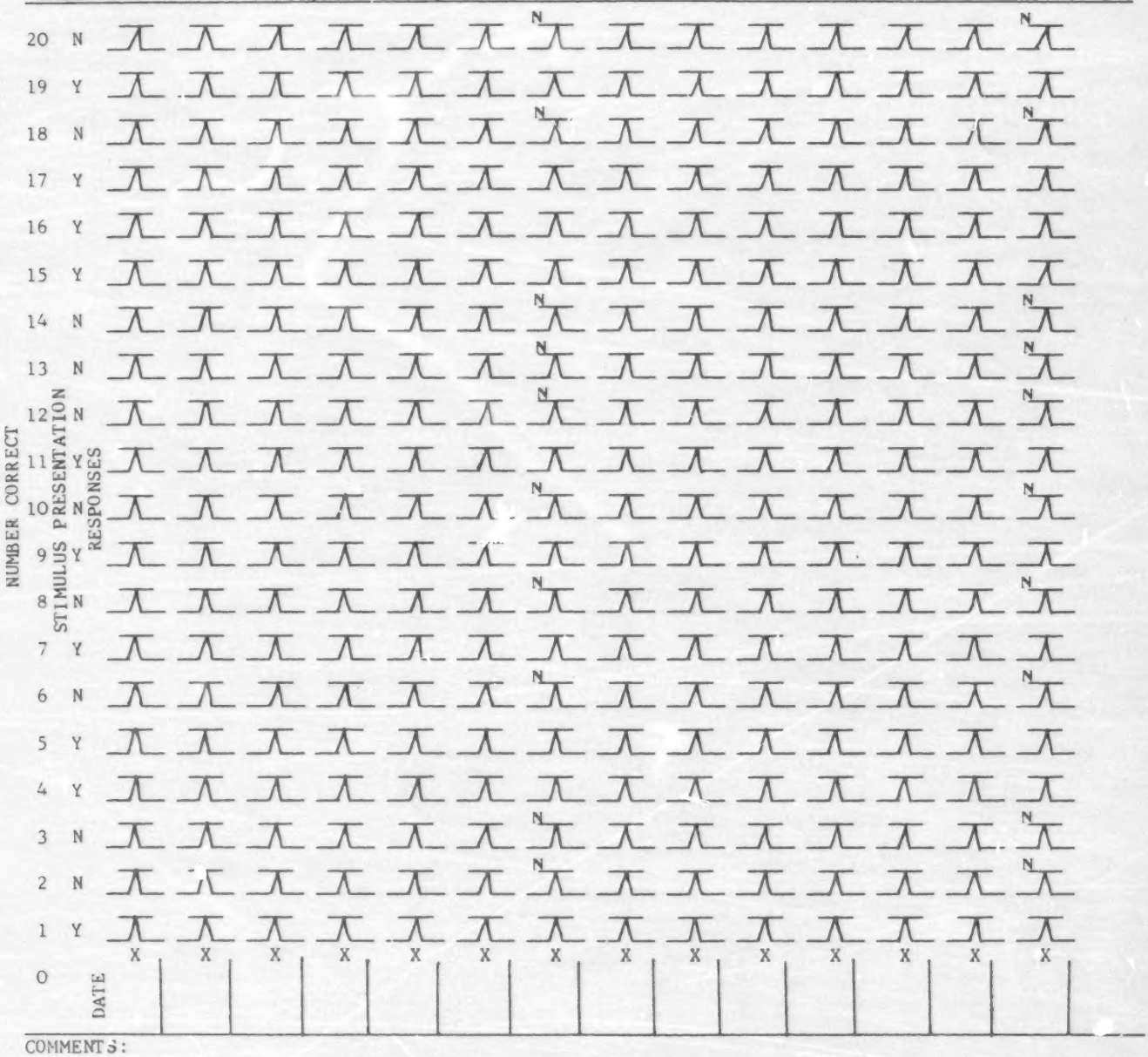
Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Circle appropriate phase above.

Item: _____

a) IS THIS A (LABEL)?* Y="yes" N="no"

*LABEL included in this question depends on "Y" or "N" code in the stimulus column.



COMMENTS:

Board Signing

Type 1

Scoring Form for Step 7 (Phase VII)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items used: 1) _____ 2) _____ If the space in the third column includes a (1) or (2), use that item label in your question to elicit a "yes" response. If there is a blank in that column, use an item label (from the Skill Test) other than the one shown to elicit a "no" response.

Display this item:		Ask. WHAT IS THIS? Score	Ask, IS THIS A ...	Expected Response	Score
1.	(1)		(1)?	"yes"	
2.	(2)		_____?	"no"	
3.	(2)		(2)?	"yes"	
4.	(1)		_____?	"no"	
5.	(1)		_____?	"no"	
6.	(2)		(2)?	"yes"	
7.	(1)		(1)?	"yes"	
8.	(2)		(2)?	"yes"	
9.	(2)		_____?	"no"	
10.	(1)		_____?	"no"	
11.	(1)		_____?	"no"	
12.	(1)		(1)?	"yes"	
13.	(2)		(2)?	"yes"	
14.	(2)		_____?	"no"	
15.	(1)		_____?	"no"	
16.	(2)		(2)?	"yes"	
17.	(1)		(1)?	"yes"	
18.	(2)		_____?	"no"	
19.	(2)		_____?	"no"	
20.	(1)		(1)?	"yes"	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (NR). For Level C only, score each trial as acceptable as a total response (+); or not acceptable as a total response (0).

Percent Summary for Session

		Nonspeech + ✓ - S 0	Speech + - S 0	Acceptability + 0
Label ( )	Score			
	Percent			
Yes/No	Score			
	Percent			
Total	Score			
	Percent			

Board
Signing

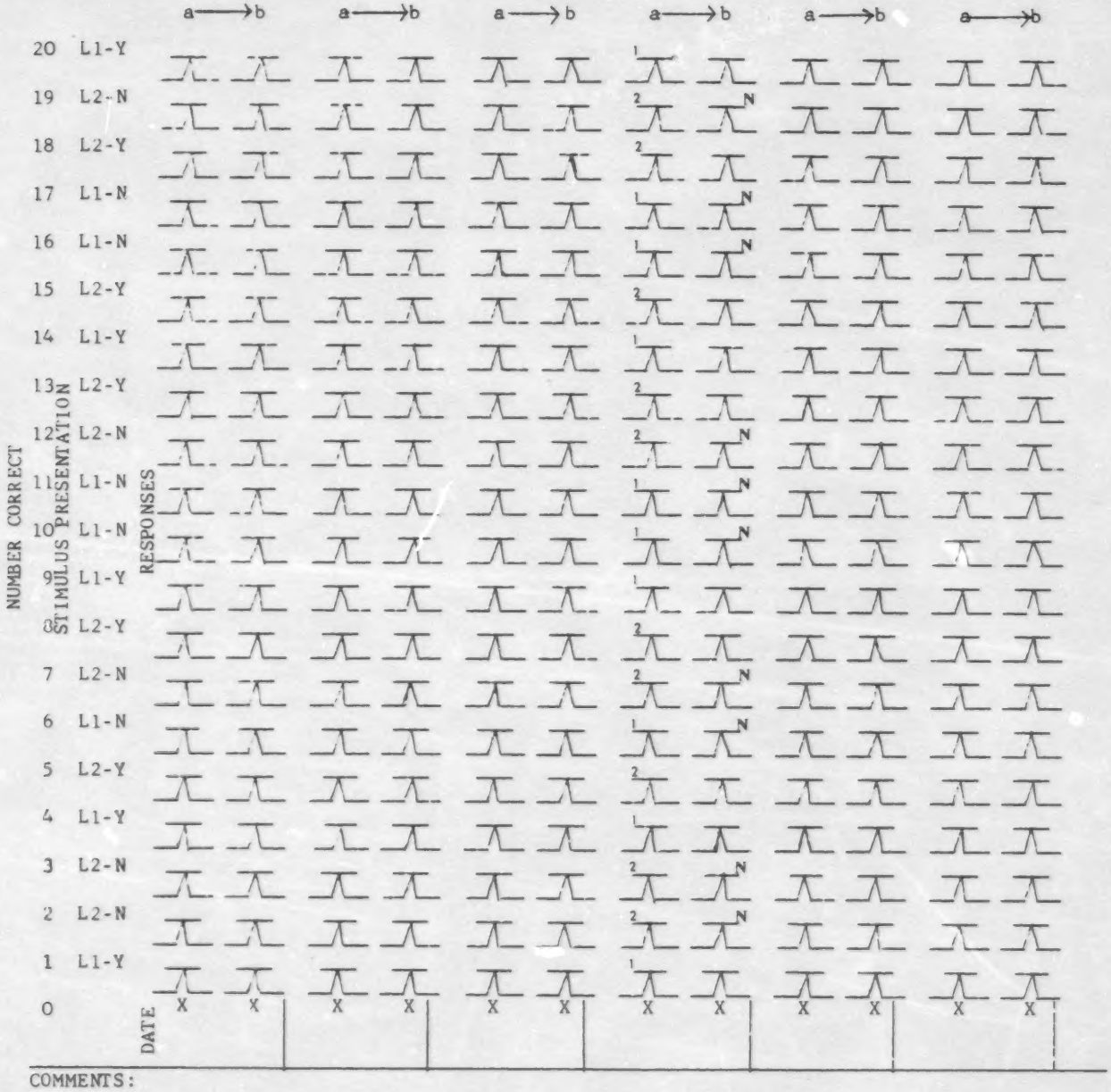
Type 2

Scoring Form for Step 7 (Phase VII)

Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items: 1) _____ 2) _____
a) WHAT IS THIS? b) IS THIS A (LABEL)?*
L: "(Label)" for 1) or 2) Y="yes" N="no"
*LABEL included in this question depends on "Y" or "N" code in the Stimulus column.



COMMENTS:

Board Signing

Type 1

Scoring Form for Step 7 (Phase VIII)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

Items Used: 1) _____ 2) _____

Display this Item	Ask, IS THIS A ...	Expected Response	Score	Display this Item	Ask, IS THIS A ...	Expected Response	Score
1. (1)	(1)?	"yes"		17. (1)	(1)?	"yes"	
2. (2)	_____?	"no"		18. (2)	_____?	"no"	
3. (2)	(2)?	"yes"		19. (2)	_____?	"no"	
4. (1)	_____?	"no"		20. (1)	(1)?	"yes"	
5. (1)	_____?	"no"		21. (1)	_____?	"no"	
6. (2)	(2)?	"yes"		22. (2)	(2)?	"yes"	
7. (1)	(1)?	"yes"		23. (2)	_____?	"no"	
8. (2)	(2)?	"yes"		24. (1)	(1)?	"yes"	
9. (2)	_____?	"no"		25. (1)	(1)?	"yes"	
10. (1)	_____?	"no"		26. (1)	_____?	"no"	
11. (1)	_____?	"no"		27. (2)	_____?	"no"	
12. (1)	(1)?	"yes"		28. (2)	(2)?	"yes"	
13. (2)	(2)?	"yes"		29. (1)	_____?	"no"	
14. (2)	_____?	"no"		30. (2)	_____?	"no"	
15. (1)	_____?	"no"		31. (1)	(1)?	"yes"	
16. (2)	(2)?	"yes"		32. (2)	(2)?	"yes"	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech					Speech				Acceptability	
	+	✱	-	S	0	+	-	S	0	+	0
Score											
Percent											

Board
Signing

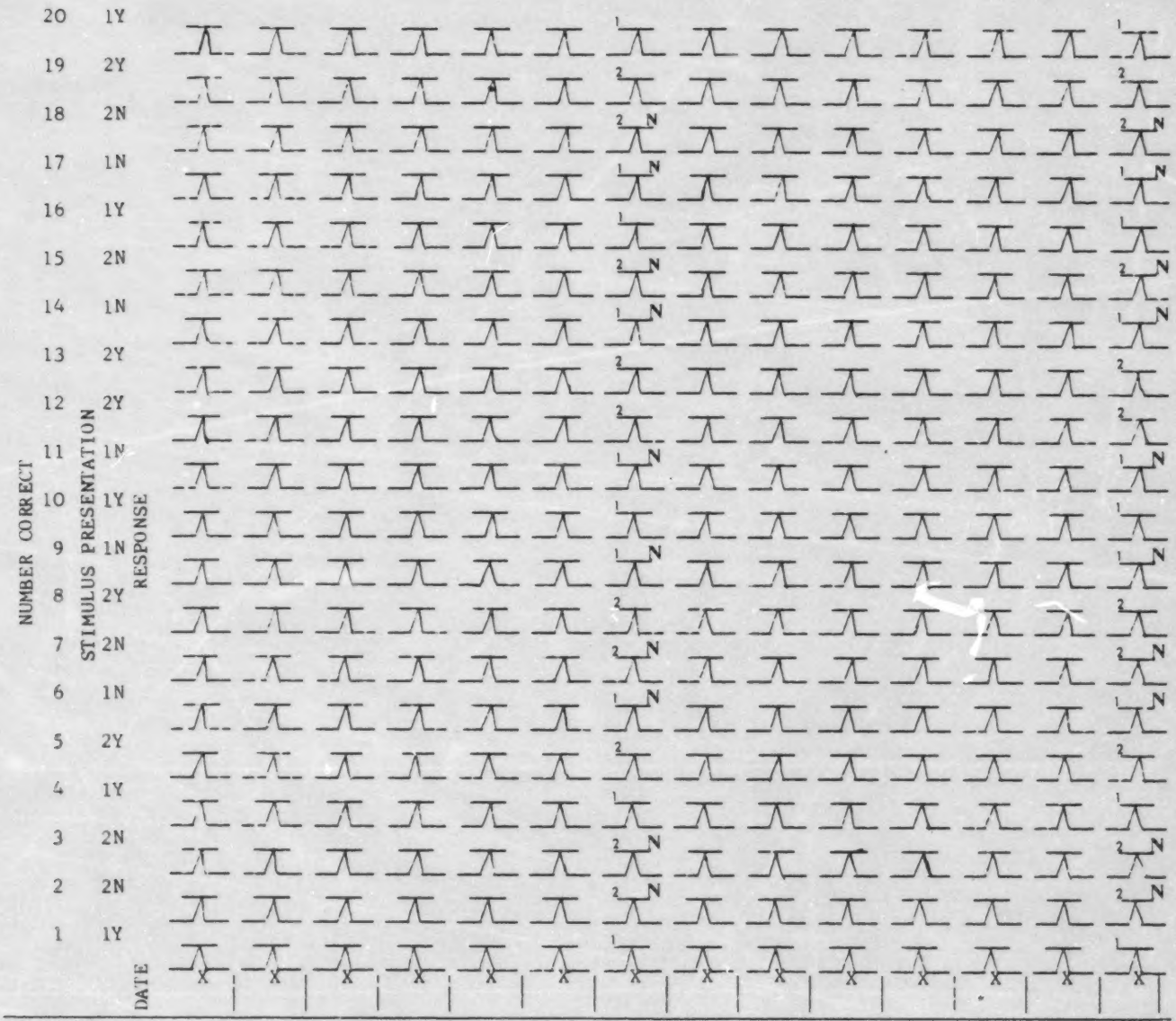
Type 2

Scoring Form for Step 7 (Phase VIII)

Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items: 1) _____ 2) _____
a) IS THIS A (LABEL)?* Y: "yes" N: "no"
*LABEL included in this question depends on "Y" or "N" code in the stimulus column.



COMMENTS:

Board Signing

Type 1

Scoring Form for Step 7 (Phase X)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

List Item Used: 1)_____ 2)_____ 3)_____

	Display this item	Ask, IS THIS A ...	Expected Response	Score		Display this item	Ask, IS THIS A	Expected Response	Score
1.	(2)	(2)?	"yes"		19.	(1)	_____?	"no"	
2.	(1)	(1)?	"yes"		20.	(2)	(2)?	"yes"	
3.	(3)	_____?	"no"		21.	(2)	_____?	"no"	
4.	(3)	(3)?	"yes"		22.	(1)	(1)?	"yes"	
5.	(2)	_____?	"no"		23.	(3)	_____?	"no"	
6.	(1)	_____?	"no"		24.	(1)	(1)?	"yes"	
7.	(3)	(3)?	"yes"		25.	(3)	(3)?	"yes"	
8.	(2)	_____?	"no"		26.	(2)	(2)?	"yes"	
9.	(2)	(2)?	"yes"		27.	(3)	_____?	"no"	
10.	(3)	_____?	"no"		28.	(1)	_____?	"no"	
11.	(1)	(1)?	"yes"		29.	(3)	(3)?	"yes"	
12.	(1)	_____?	"no"		30.	(2)	_____?	"no"	
13.	(2)	_____?	"no"		31.	(3)	_____?	"no"	
14.	(3)	(3)?	"yes"		32.	(1)	(1)?	"yes"	
15.	(1)	_____?	"no"		33.	(2)	_____?	"no"	
16.	(3)	_____?	"no"		34.	(2)	(2)?	"yes"	
17.	(2)	(2)?	"yes"		35.	(1)	_____?	"no"	
18.	(1)	(1)?	"yes"		36.	(3)	(3)?	"yes"	

Record response components as correct (+); Incorrect (-); shaped or prompted (S); or no response (0). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (0).

Percent Summary for Session

	Nonspeech					Speech				Acceptability	
	+	+	-	S	0	+	-	S	0	+	0
Score											
Percent											

Board Signing

Type 2

Scoring Form for Step 7 (Phase X)

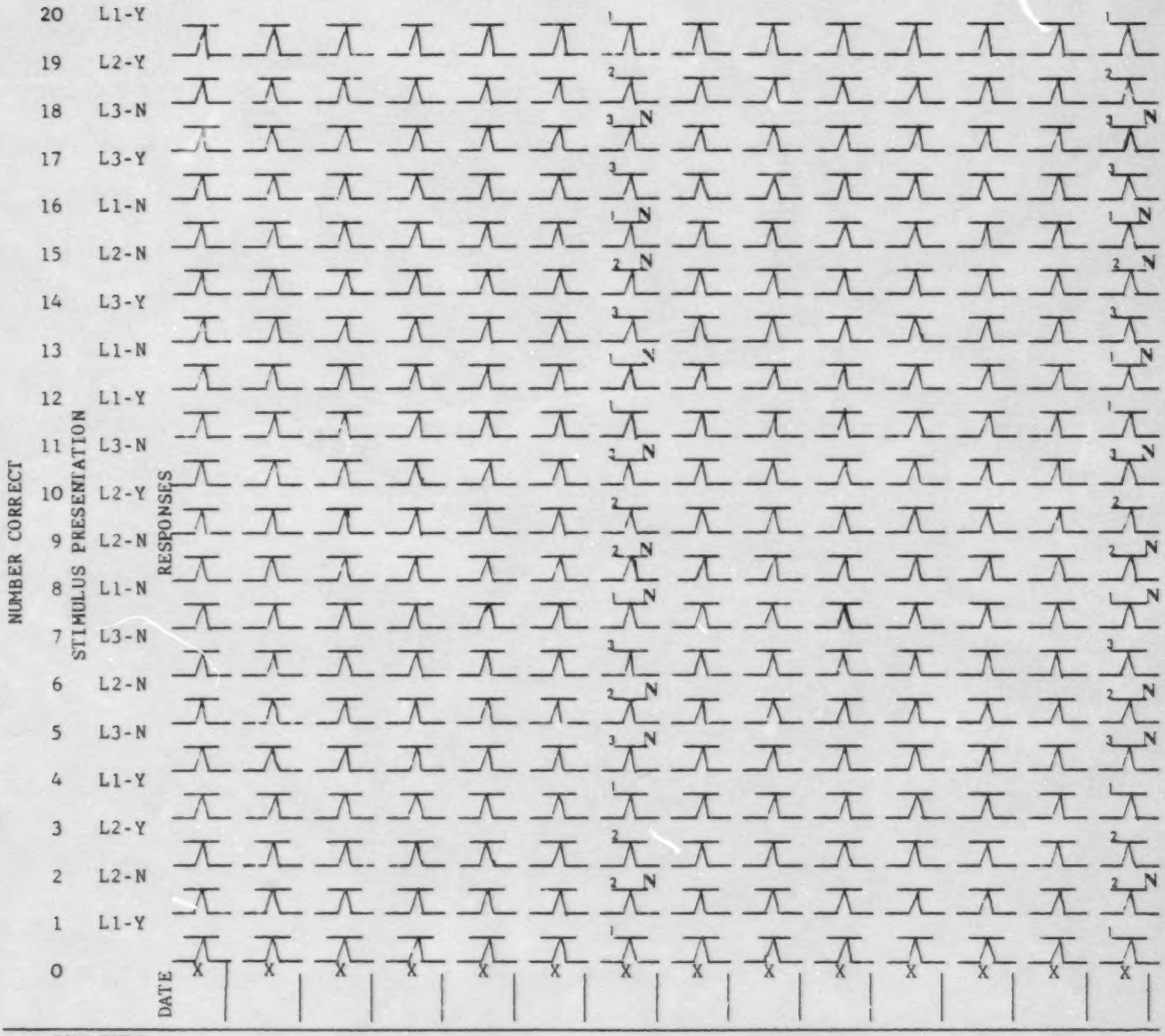
Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items: 1) _____ 2) _____ 3) _____

a: IS THIS A (LABEL)?* Y="yes" N="no"

*LABEL included in this question depends on "Y" or "N" code in the stimulus column.



COMMENTS:

Board Signing

Type 1

Scoring Form for Step 7 (Phases XII and XIV)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

List items used: 1) _____; 2) _____; 3) _____; 4) _____

Circle phase XII or XIV

Display this Item:	Ask, IS THIS A ...	Expected Response	(Score)	Display this Item:	Ask IS THIS A ...	Expected Response	(Score)
1. (3)	(3) ?	"yes"		17. (2)	(2) ?	"yes"	
2. (1)	(1) ?	"yes"		18 (3)	____?	"no"	
3. (4)	____?	"no"		19. (1)	(1) ?	"yes"	
4. (2)	____?	"no"		20. (2)	____?	"no"	
5. (2)	(2) ?	"yes"		21. (4)	(4) ?	"yes"	
6. (4)	____?	"no"		22. (3)	(3) ?	"yes"	
7. (3)	(3) ?	"yes"		23. (1)	____?	"no"	
8. (3)	____?	"no"		24. (4)	____?	"no"	
9. (1)	____?	"no"		25. (2)	(2) ?	"yes"	
10. (4)	(4) ?	"yes"		26. (3)	____?	"no"	
11. (4)	____?	"no"		27. (1)	(1) ?	"yes"	
12. (2)	(2) ?	"yes"		28. (2)	____?	"no"	
13. (1)	(1) ?	"yes"		29. (1)	____?	"no"	
14. (1)	____?	"no"		30. (4)	(4) ?	"yes"	
15. (3)	____?	"no"		31. (3)	(3) ?	"yes"	
16. (2)	____?	"no"		32. (4)	(4) ?	"yes"	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (O). For Level C only, score each trial as acceptable as a total unit (+); or not acceptable as a total unit (O).

Percent Summary for Session

	Nonspeech					Speech				Acceptability	
	+	+	-	S	O	+	-	S	O	+	O
Score											
Percent											

Board Signing

Type 2

Scoring Form for Step 7 (Phases XII and XIV)

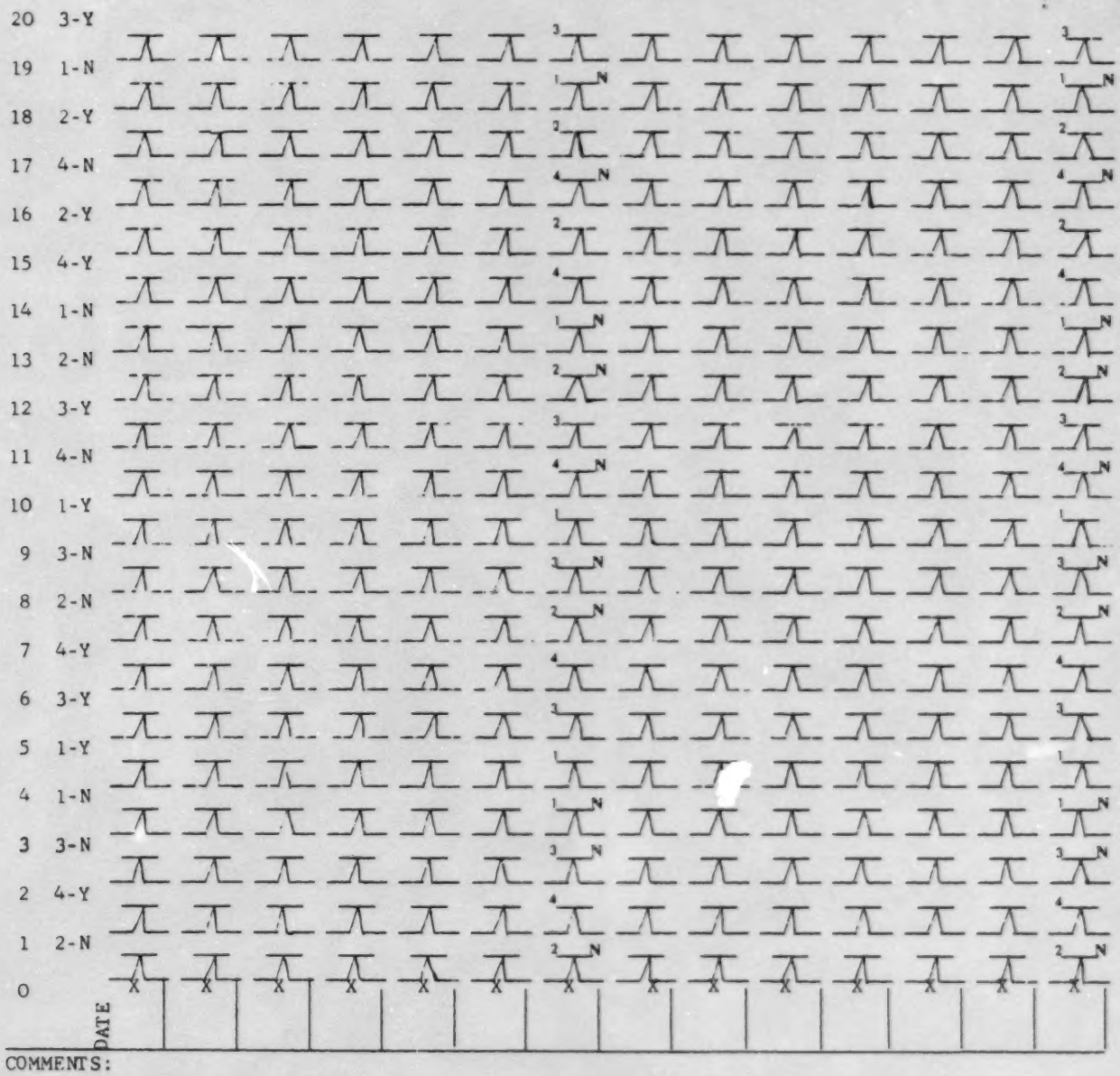
Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items: 1) _____ 2) _____ 3) _____ 4 _____

a) IS THIS A (LABEL)?* Y="yes" N="no"

*LABEL included in this question depends on "Y" or "N" code in the stimulus column.



COMMENTS:

Boarc
Signing

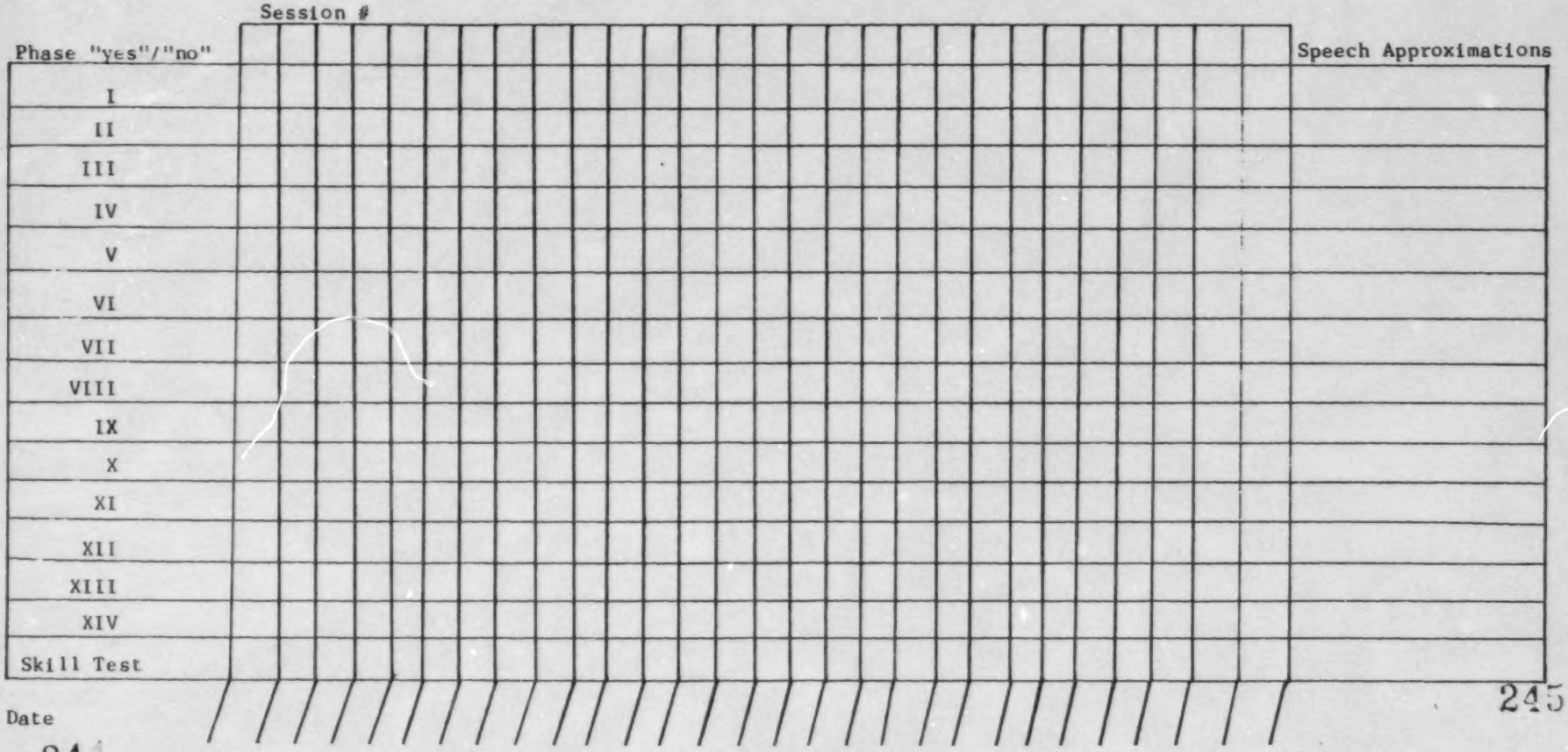
Summary Form for Step 7

Speech Level:_____ Trainer's Stimulus:_____

Student _____ Trainer _____

Date Training Started _____ Date Training Ended _____ Total Sessions to Criterion _____

Percent Correct Responses Across Sessions



(Circled percentages represent criterion based on 12 consecutive correct responses.)

Board

Type 1

Scoring Form for Step 8 (Phase I)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items Used
Symbolized: 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

Nonsymbolized: 6)_____ 7)_____ 8)_____ 9)_____ 10)_____

Present this item Ask, WHAT DO YOU WANT?	Expected Response	Score	Present this item Ask, WHAT DO YOU WANT?	Expected Response	Score
1. (1)	"I want (label)"		16. (3)	"I want (label)"	
2. (6)	"I want" object		17. (8)	"I want" object	
3. (3)	"I want (label)		18. (9)	"I want" object	
4. (4)	"I want (label)		19. (7)	"I want" object	
5. (7)	"I want" object		20. (4)	"I want (label)"	
6. (5)	"I want (label)		21. (5)	"I want (label)"	
7. (8)	"I want" object		22. (6)	"I want" object	
8. (9)	"I want" object		23. (5)	"I want (label)"	
9. (2)	"I want (label)		24. (2)	"I want (label)"	
10. (10)	"I want" object		25. (9)	"I want" object	
11. (6)	"I want" object		26. (10)	"I want" object	
12. (7)	"I want" object		27. (3)	"I want (label)	
13. (1)	"I want (label)		28. (1)	"I want (label)	
14. (8)	"I want" object		29. (4)	"I want (label)	
15. (2)	"I want (label)		30. (10)	"I want" object	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech					Speech			
	+	+	-	S	0	+	-	S	0
Score									
Percent									

Board

Type 2

Scoring Form for Step 8 (Phase I)

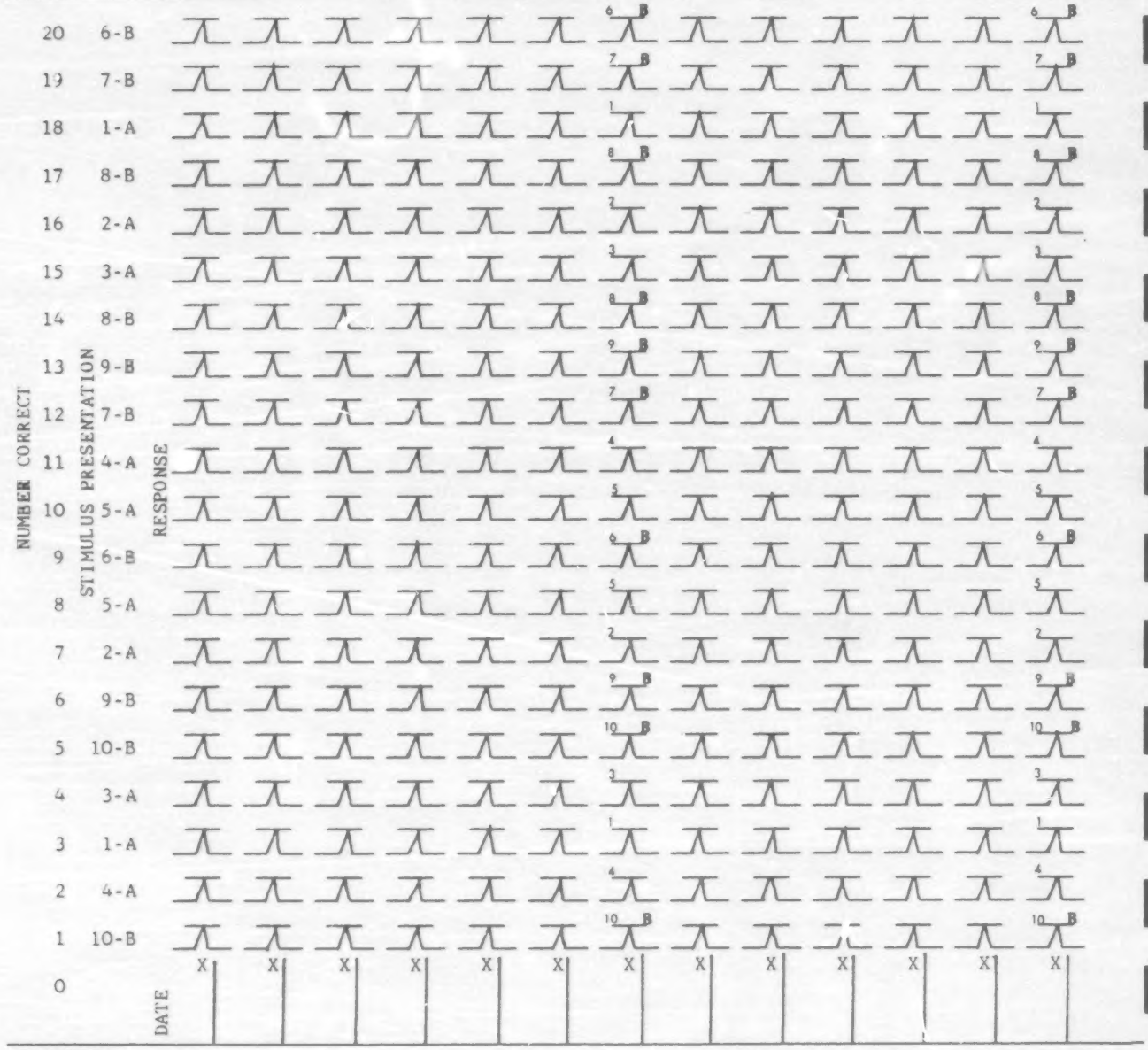
Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Symbolized items: 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

Nonsymbolized items: 6)_____ 7)_____ 8)_____ 9)_____ 10)_____

a: WHAT WANT? A: "I want (label)" B: "I want" object



COMMENTS:

Board Type 1

Scoring Form for Step 8 (Phase II)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items Displayed
Symbolized: 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

Nonsymbolized: 6)_____ 7)_____ 8)_____ 9)_____ 10)_____

Display all items Ask, WHAT DO YOU WANT?	Expected Response "I want (label)" "I want" object (Score)	Display all items Ask, WHAT DO YOU WANT?	Expected Response "I want (label)", or "I want" object (Score)
1.		16.	
2.		17.	
3.		18.	
4.		19.	
5.		20.	
6.		21.	
7.		22.	
8.		23.	
9.		24.	
10.		25.	
11.		26.	
12.		27.	
13.		28.	
14.		29.	
15.		30.	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech					Speech				
	+	+	-	S	0	+	-	S	0	
Score										
Percent										

Board

Type 2

Scoring Form for Step 8 (Phase II)

Student _____ Trainer _____

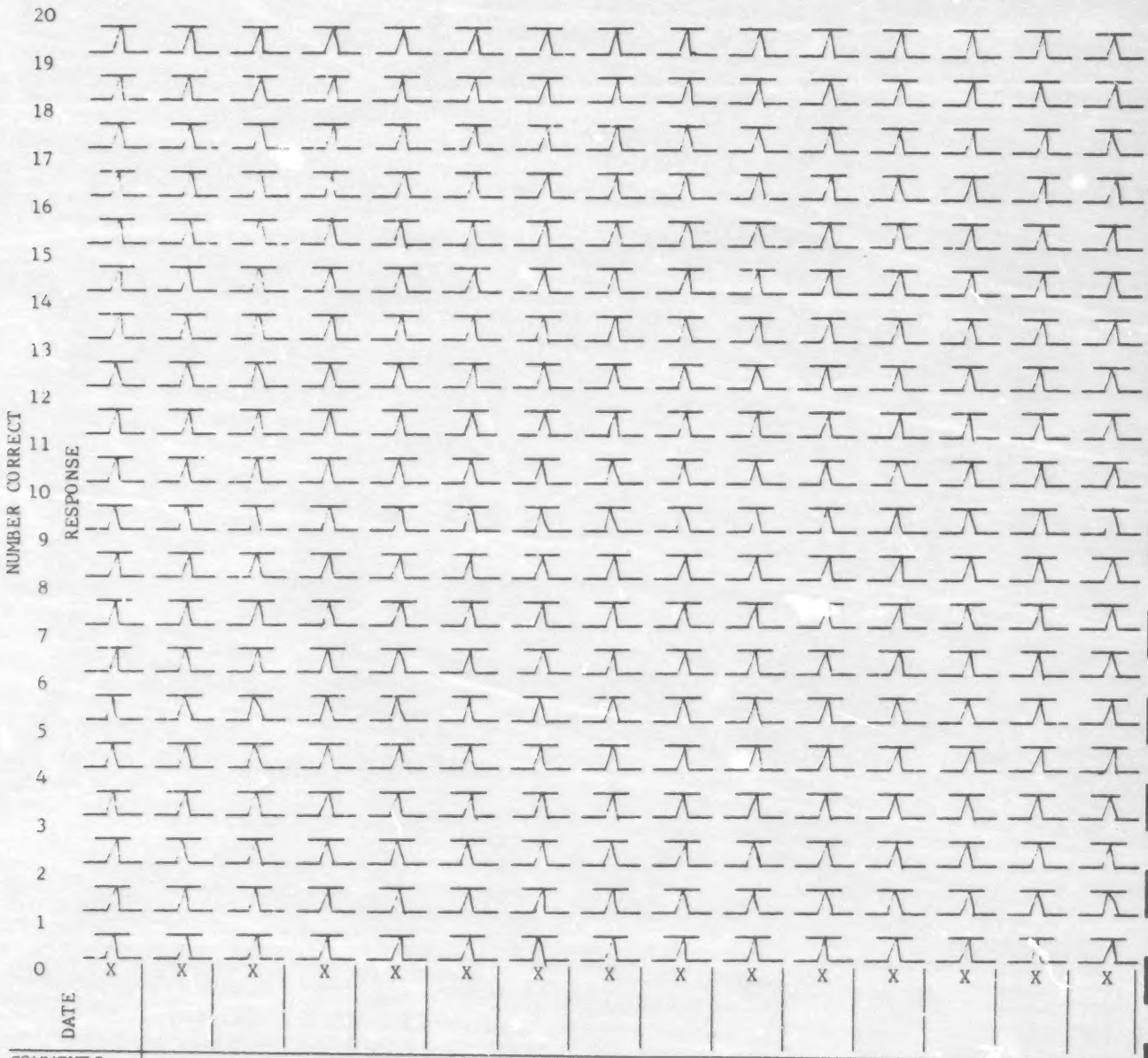
Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Items Displayed

Symbolized: 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

Nonsymbolized: 6)_____ 7)_____ 8)_____ 9)_____ 10)_____

a: WHAT WANT? A or B "I want (label)" or "I want" object



COMMENTS:

Board

Summary Form for Step 8

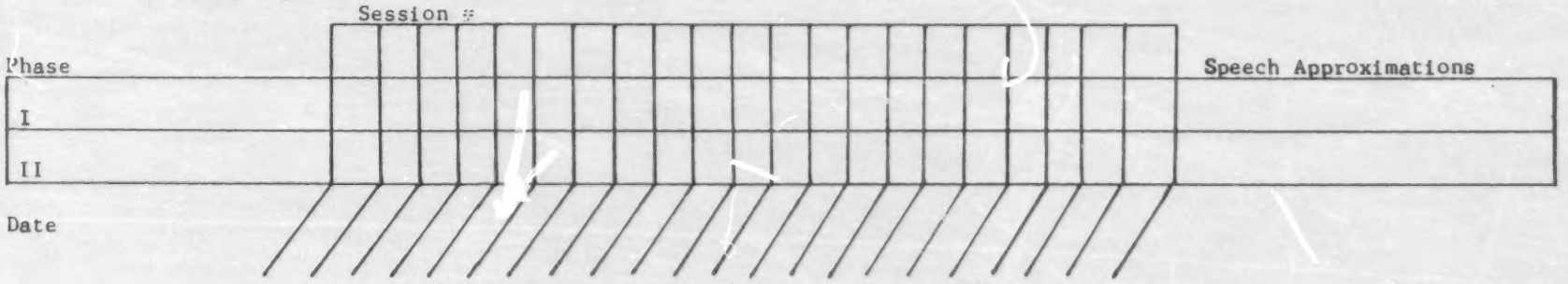
Speech Level: _____ Trainer's Stimulus _____

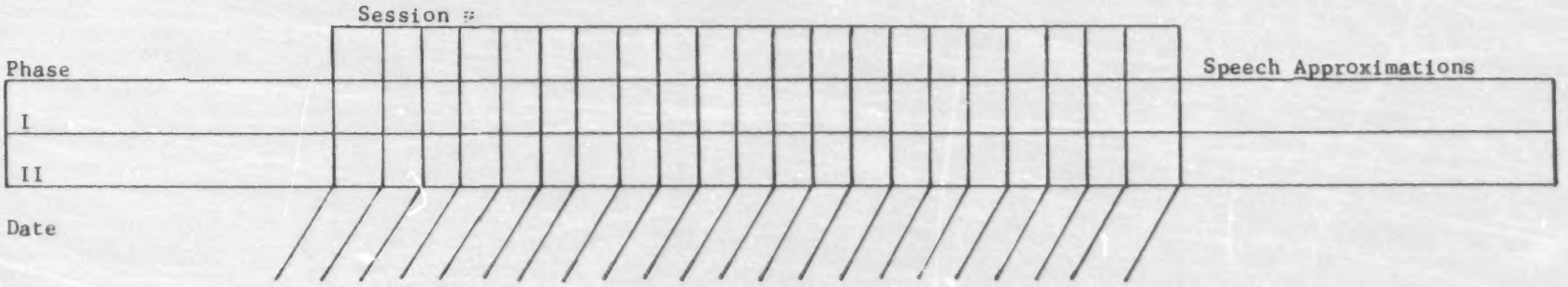
Student _____ Trainer _____

Date Training Started _____ Date Training Ended: _____ Total Sessions to Criterion: _____

Percent Correct Responses Across Sessions

"I want" "(label)"/object





(Circled percentages represent criterion based on 12 consecutive correct responses.)

Board

Type 1

Scoring Form for Step 9 (Phase I)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

List items used:

Symbolized 1)_____ 2)_____ 3)_____

Nonsymbolized 4)_____ 5)_____

Present this item	Ask	Expected Response	Score
1.(2)	WHAT IS THAT?	"(label)"	
2.(5)	WHAT DO YOU WANT?	"I want" object	
3.(1)	WHAT DO YOU WANT?	"I want (label)"	
4.(3)	WHAT IS THAT?	"(label)"	
5.(5)	WHAT IS THAT?	"no card"	
6.(2)	WHAT DO YOU WANT?	"I want (label)"	
7.(4)	WHAT IS THAT?	"no card"	
8.(3)	WHAT DO YOU WANT?	"I want (label)"	
9.(5)	WHAT DO YOU WANT?	"I want" object	
10.(1)	WHAT IS THAT?	"(label)"	
11.(4)	WHAT DO YOU WANT?	"I want" object	
12.(2)	WHAT IS THAT?	"(label)"	
13.(1)	WHAT IS THAT?	"(label)"	
14.(3)	WHAT DO YOU WANT?	"I want (label)"	
15.(4)	WHAT IS THAT?	"no card"	
16.(2)	WHAT DO YOU WANT?	"Iwant (label)"	
17.(4)	WHAT IS THAT?	"no card"	
18.(1)	WHAT DO YOU WANT?	"I want (label)"	
19.(3)	WHAT IS THAT?	"(label)"	
20.(2)	WHAT IS THAT?	"(label)"	
21.(1)	WHAT IS THAT?	"(label)"	
22.(5)	WHAT IS THAT?	"no card"	
23.(3)	WHAT DO YOU WANT?	"I want (label)"	
24.(5)	WHAT DO YOU WANT?	"I want" object	
25.(1)	WHAT DO YOU WANT?	"I want (label)"	
26.(3)	WHAT IS THAT?	"(label)"	
27.(4)	WHAT DO YOU WANT?	"I want" object	
28.(2)	WHAT DO YOU WANT?	"Iwant (label)"	
29.(5)	WHAT IS THAT?	"no card"	
30.(4)	WHAT DO YOU WANT?	"I want" object	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (0).

Percent Summary for Session

	Nonspeech					Speech			
	+	+	-	S	0	+	-	S	0
Score									
Percent									

Board

Type 2

Scoring Form for Step 9 (Phase I)

Student _____ Trainer _____

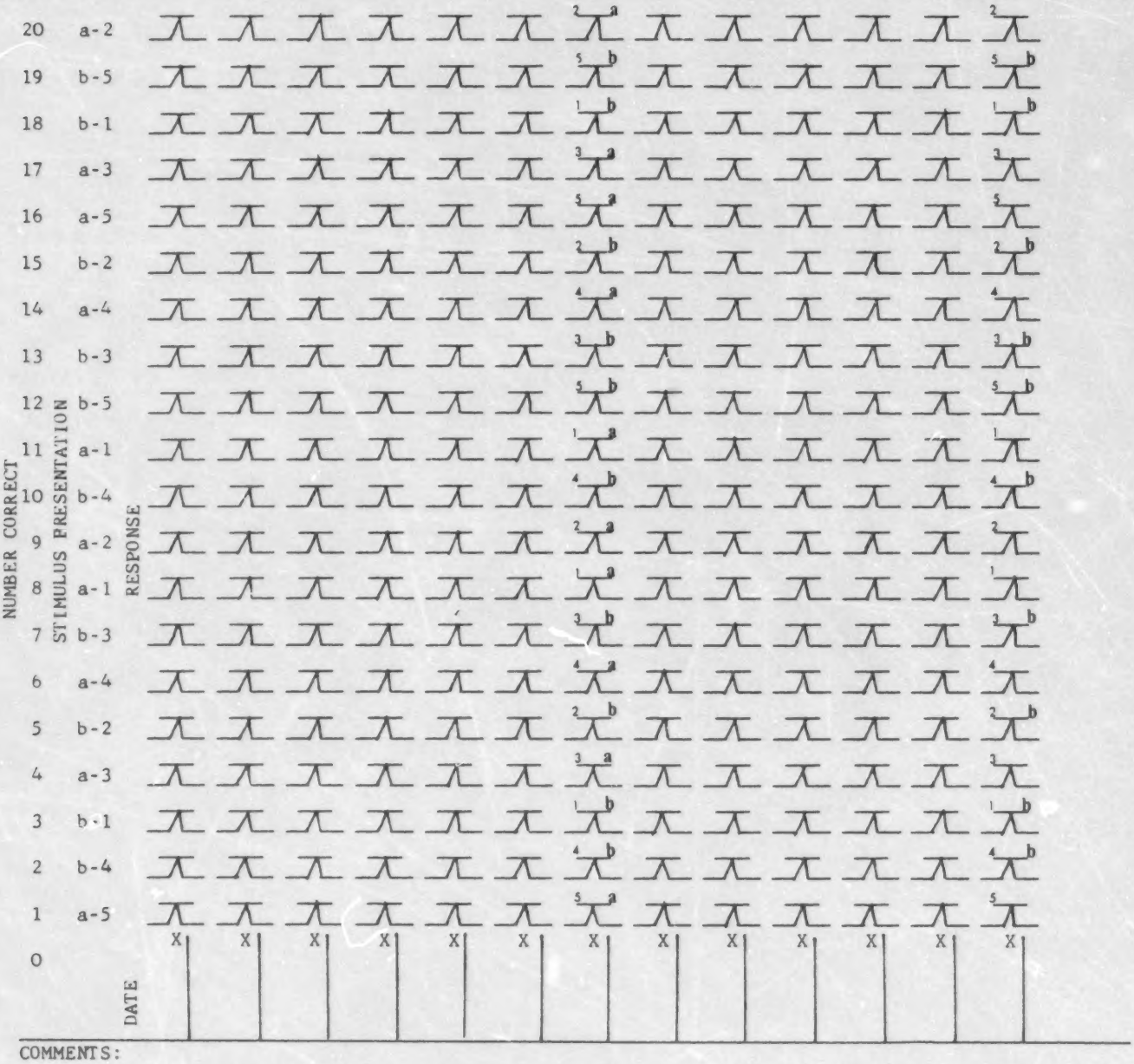
Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

Symbolized items: 1)_____ 2)_____ 3)_____

Nonsymbolized items: 4)_____ 5)_____

a: WHAT IS THAT? "(label)" or point to "no card"

b: WHAT DO YOU WANT? "I want (label)" or "I want" object



COMMENTS:

Board

Type 1

Scoring Form for Step 9 (Phase II)

Student _____ Date _____ Session # _____

Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech | Speech Alone | Nonspeech Alone

Symbolized items: 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

Nonsymbolized items: 6)_____ 7)_____ 8)_____ 9)_____ 10)_____

Present this item, Ask, WHAT IS THAT?	Expected Response	Score	Ask, WHAT DO YOU WANT?	Expected Response	Score
1.(1)	"(label)"			"I want (label)"	
2.(2)	"(label)"			"I want (label)"	
3.(6)	"no card"			"I want" object	
4.(3)	"(label)"			"I want (label)"	
5.(7)	"no card"			"I want" object	
6.(8)	"no card"			"I want" object	
7.(4)	"(label)"			"I want (label)"	
8.(9)	"no card"			"I want" object	
9.(5)	"(label)"			"I want (label)"	
10.(10)	"no card"			"I want" object	
11.(6)	"no card"			"I want" object	
12.(1)	"(label)"			"I want (label)"	
13.(7)	"no card"			"I want" object	
14.(8)	"no card"			"I want" object	
15.(2)	"(label)"			"I want (label)"	
16.(3)	"(label)"			"I want (label)"	
17.(4)	"(label)"			"I want (label)"	
18.(9)	"no card"			"I want" object	
19.(10)	"no card"			"I want" object	
20.(5)	"(label)"			"I want (label)"	

Record response components as correct (+); incorrect (-); shaped or prompted (S); or no response (NR). For Level C only, score each trial as acceptable as a total response (+); or not acceptable as a total response (0).

Percent Summary for Session*

		Nonspeech +	✓	-	S	0	Speech +	-	S	0
"(label)" / "no card"	Score									
	Percent									
"I want" "(label)"/object	Score									
	Percent									
Total	Score									
	Percent									

*Remember that criterion performance is based upon both responses in the chain being correct or acceptable, i.e., the student must first label the item correctly and make the appropriate request for the same item.

Board

Type 2

Scoring Form for Step 9 (Phase II)

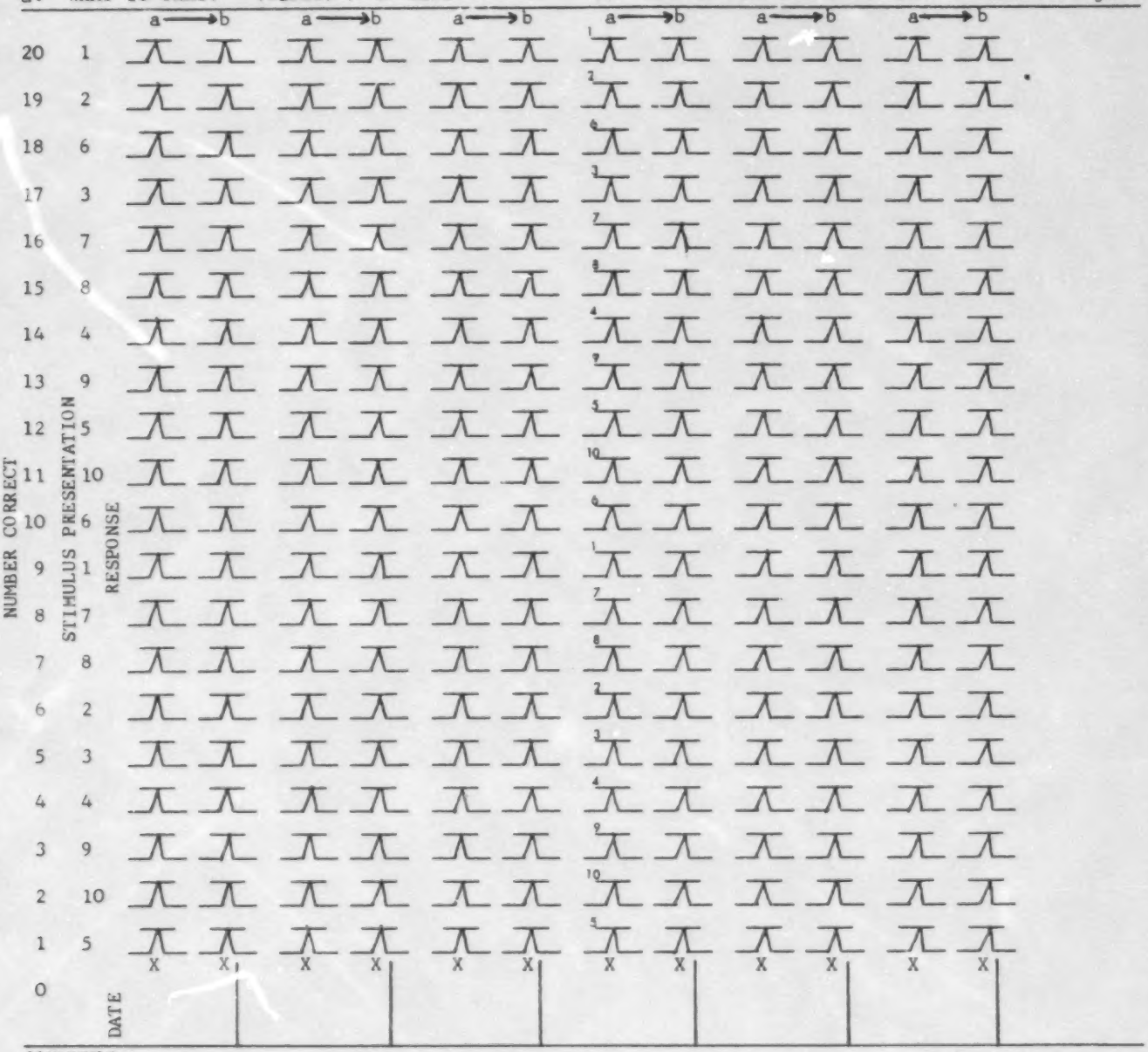
Student _____ Trainer _____

Circle Speech Level: A B C Circle Trainer's Stimulus: Speech Plus Nonspeech / Speech Alone / Nonspeech Alone

Symbolized Items: 1)_____ 2)_____ 3)_____ 4)_____ 5)_____

Nonsymbolized Items: 6)_____ 7)_____ 8)_____ 9)_____ 10)_____

a: WHAT IS THAT? "(label)"/"no card" b. WHAT DO YOU WANT? "I want" "(label)"/object



COMMENTS:

Board

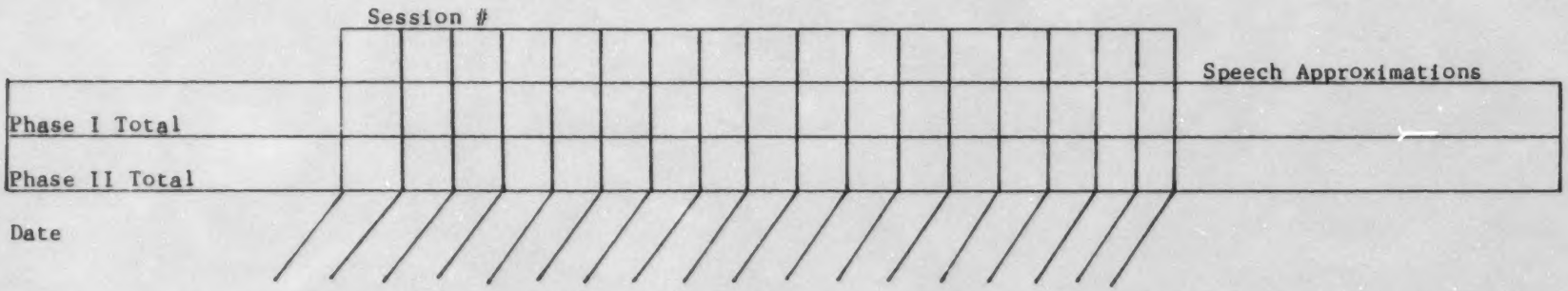
Summary Form for Step 9

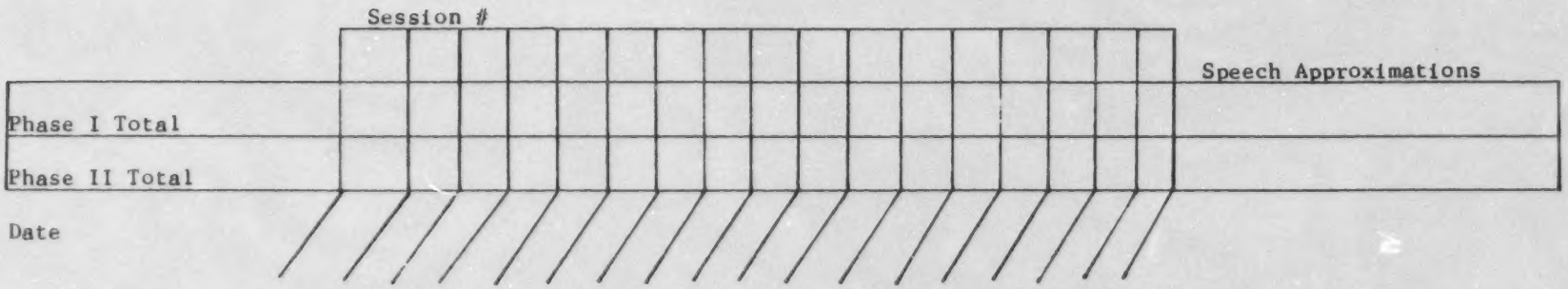
Speech Level: _____ Trainer's Stimulus: _____

Student _____ Trainer _____

Date Training Started _____ Date Training Ended: _____ Total Sessions to Criterion _____

Percent Correct Responses Across Sessions





(Circled percentages represent criterion based on 12 consecutive correct responses.)